



FRIDAY, SEPTEMBER 28, 1877.

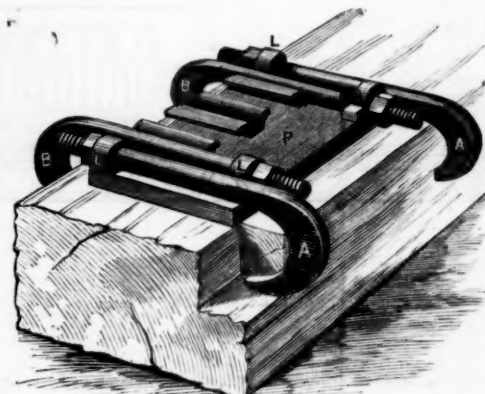
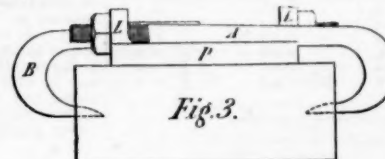
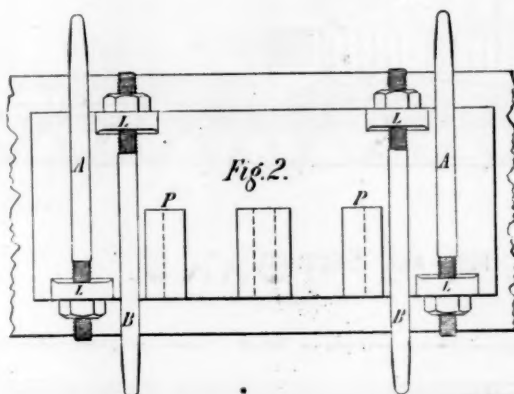
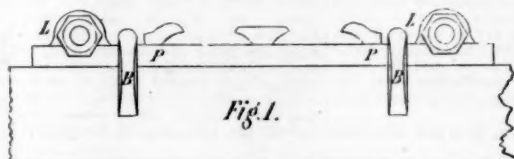
The Distribution of Weight in Locomotives.

The loads carried by different pairs of wheels supporting a locomotive vary considerably; but it is generally supposed that each wheel of any given pair carries the same load. There is reason, however, to believe that this is not the case, and that as a matter of fact the distribution of weight among the wheels is very unequal. Assuming that all the weight of an engine is concentrated at its centre of gravity, then the load to be carried by any given wheel would be determined, other things being equal, by its distance from the centre of gravity, provided the load and the road were absolutely rigid. In practice no such condition obtains. Both the load and the road are far from being rigid, and in addition springs are introduced for the express purpose of securing elasticity. These springs are usually made adjustable by screws or some other device, the springs being set up or let down until the engine is properly levelled and the requisite distribution of weight among the axles has been effected. It is then taken for granted that both the wheels on one axle carry the same load; but the assumption rests on no sufficient basis, because the frame of the engine, although flexible in some degree, is quite rigid enough to distribute strains, and the load put on any one wheel really depends very much on the strength of the springs. For example, in a new, stiff engine a leading spring on one side of an engine might be set

was 10 tons 7 cwt. 2 qr., while that carried by the other trailing and driving wheels was only 8 tons 8 cwt., or nearly 2 tons less. It appears, therefore, to be very probable that an undue proportion of the weight of the engine was from the first put on the right-hand leading and off-side trailing springs, and it is not impossible that the fracture of so many leaves in the first-mentioned spring was mainly due to the fact that it was either too stiff or too heavily loaded, or both.

The whole subject is one of very considerable interest, and locomotive superintendents who possess the requisite facilities might obtain a good deal of valuable information if they would first weigh their engines wheel by wheel when they leave the shops, and again subsequently after they have run a few thousand miles. The cost of conducting such experiments would be very small, and hints would be afforded as to behavior of springs in railway service that could not fail to prove useful. We are aware that engines are frequently weighed in this way at the outset, but we do not think that any record has ever been prepared of the effects produced on springs by daily use on a railroad.

[It is not stated in the above article from *The Engineer* whether the driving and trailing wheel springs were connected by equalizing beams. If they were, and if the weight on the leading wheels rested on a centre bearing, as it does on both the single and double axle trucks or bogies used in this country, then so unequal a distribution of weight as that indicated above would, we believe, be impossible, unless some of the springs were entirely inefficient, so that the axle boxes rested against the frames. Practically the weight of our American engines rests on three points, the centre of the truck and the fulcrums of



KELLY'S SWITCH CHAIR.

up so hard that almost the whole weight of the front of the engine would be carried by the wheel next to that spring. It may be said that such things cannot take place in practice; the following record of the results of an experiment made on the London & Brighton Railway will show that it is not only possible but probable that few engines which have made any considerable mileage have the weights at all equally distributed among their wheels. A London & Brighton train ran off the rails of the Southeastern Railway, between Redhill and Merstham, on the 18th of June. In order to determine whether the engine was in fault, Colonel Yolland had it weighed wheel by wheel at Brighton, the boiler being filled up properly with water. The result is shown in the following table:

	Right-hand or off-side.	Left-hand or platform side.	Total.
	Tons, cwt. qr.	Tons, cwt. qr.	Tons, cwt. qr.
Leading wheels.....	5 6 0	4 19 0	10 5 0
Driving ".....	7 17 0	6 19 0	14 16 0
Trailing ".....	3 9 0	5 1 2	8 10 2
Total weight.....	= 33 11 2		

From this it will be seen that one leading wheel carried 7 cwt. more than the other, one driving wheel 18 cwt. more than the other, and one trailing wheel 1 ton 12 cwt. 2 qr. more than the other. The engine was 7 cwt. 2 qr. heavier at one side than the other. An examination of the springs showed that "the right-hand or off-side leading bearing springs, originally composed of eighteen plates 4 1/2 in. by 5/8 in., had six of its plates broken entirely across, to wit, the back or first plate, the second, third, fourth, eighth and fifteenth. All of these were old breakages, and there was consequently little sustaining power in that spring prior to the accident. The left-hand or platform side leading spring had two plates broken, the tenth and eleventh plates; one of these had only recently broken completely across, although it had been partially broken for some time. All the other springs belonging to the driving and trailing axles were examined and found to be correct."

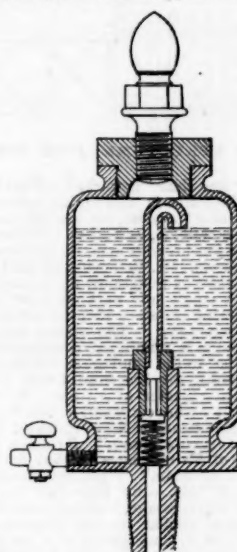
Now, it is not stated that the axle-box of the weak spring bottomed on the horn-plate; but if it did not, then the spring which we are told had little sustaining power must have carried 5 tons 6 cwt., less its own weight and that of the wheel, axle-box, and half the axle, while the fellow leading spring on the opposite side must have carried 4 tons 19 cwt., a similar deduction being made. If we suppose that the off-side leading corner of the engine lacked support because the spring was weak, then the load on the driving wheel at the same side would be increased, while that on the trailing wheel would be diminished, and this apparently actually did take place. But let us suppose that the engine was very stiff in the framing, and that the off-side leading and the near-side trailing springs were both set up, then it will be seen that an undue proportion of the weight of the engine might be carried, so to speak, on one leading and one trailing wheel. A line drawn diagonally through the engine frame, and uniting the right leading and left-hand trailing axle-box, would probably not be far from a perpendicular dropped from the centre of gravity of the engine. A glance at the figures will show that this assumption is probably more nearly true than the other, the load on the left-hand trailing wheel being 5 tons, 1 cwt. 2 qr., or within 4 1/4 cwt. of that on the leading wheel on the opposite side. The united loads borne by these two wheels

the two equalizing beams. When this is the case, no matter how great the inequalities of the truck, the weight will be distributed equally, just as a three-legged stool or engineer's tripod will rest firmly on any uneven surface, whereas a four-legged stool, if the legs are of equal length, will be unsteady on any surface which is not a plane.—

EDITOR RAILROAD GAZETTE.]

Hoagland's Improved Lubricator.

The engraving represents an improved form of oil cup now used on engines on the Erie Railway, the invention of one of



the men employed on that line. It consists of an oil cup of any convenient form, with a bent tube on the inside, the lower end of which is closed by a valve and spring. This valve has a minute opening which permits a small quantity of steam to escape into the oil cup. This steam is condensed, and falls to the bottom of the cup, the oil being lighter floats on top. By this means the surface of the oil is kept in contact with the mouth of the bent tube, and no oil can escape into the tube until an equal quantity of water is condensed in the cup. As

the opening for admitting steam is very small, the quantity of water which accumulates in the cup is extremely small, and the feed of oil is consequently very slow. A small cock on the side and on the bottom of the cup serves to draw off the water after it has accumulated for some time in the cup.

An engine with a pair of these cups is said to have run 30,000 miles and to be still running without having its valves faced off. The inventor is Mr. G. H. Hoagland, of Port Jervis, N. Y., who will be glad to give further information to any person interested in his invention.

Kelly's Switch Chair.

The engravings represent an improved form of switch chair, designed by Mr. Kelly, foreman of the track of the Lake Superior & Mississippi Railroad, at St. Paul, Minn. Fig. 1 is a front elevation, fig. 2 a plan, fig. 3 an end elevation, and fig. 4 a perspective view. It is thus described by the inventor:

"The switch chair at present in use is often fractured in the driving of the spikes, and the latter are constantly working loose and coming out, owing to the disturbance and agitation of the trains. The chair represented by the engravings is traversed at both ends and in opposite directions by two iron clamps, A A and B B, hooked at one end and nutted at the other. These clamps or bolts pass through lugs or eyes, L L, cast on the chair. The hooked ends penetrate the sides of the cross-tie under the chair when they are drawn up by the nuts at the opposite ends. Should they become loose it is easy to make

them secure by simply screwing up the nuts. The cost of construction of these chairs in quantity would not be much greater than those in ordinary use, their great durability and perfect security from accident is very much in their favor."

One of these chairs is in use at the Lake Superior & Mississippi Railroad depot in St. Paul, Minn., and has been in use nearly a year, and is said to be as "firm as a rock."

Contributions.

How It Was Done.

ATLANTIC CITY, N. J., Sept. 17, 1877.

TO THE EDITOR OF THE RAILROAD GAZETTE:
If Mr. "Slowcoach" (who asks you in your last issue for details and proof of my statements in your issue of Aug. 24, relative to the construction of Philadelphia & Atlantic City Railway) will visit our work, or will favor us with his address, we will be pleased to show him how 23,000 cubic yards of embankment was made in one week, at a cost of 10 cents per yard for excavation and embankment, with portable track and steam power; also how track was laid at five different points, a total of five miles in a single day. A trip over the line would convince the most skeptical.
J. ROWLAND.

Grate Area and Economy in Combustion.

OFFICE OF THERON SKEEL, ENGINEER,
No. 149 BROADWAY, NEW YORK, Sept. 16, 1877.

TO THE EDITOR OF THE RAILROAD GAZETTE:
I notice in your paper of last week an article on effect of the size of grate in a locomotive on the economy of the generation of steam, in which you support the idea that "the smaller the grate the better will be the economy." I have taken the liberty to call your attention to the result of experiments on two different boilers, which, so far as they go, seem to indicate that the slower the rate of combustion per square foot of grate (i. e., the larger the grate) the better will be the evaporation. Neither of these boilers were locomotive boilers, and the rate of combustion was far below that obtained in locomotives. It may be that the result would be exactly opposite in a locomotive. Nevertheless, in the absence of any equally careful experiments on locomotive boilers at high rates of combustion, I think the result should not be assumed too hastily. It is possible that the increased efficiency of the boiler when the grates were reduced is due to some other cause than the higher rate of combustion. However that may be, the fact remains that with the same boiler (in marine practice) the highest economy is always obtained with the slowest possible rate of combus

tion, even down to $2\frac{1}{2}$ lbs. of anthracite combustible per square foot of grate per hour.

These remarks apply entirely to anthracite coal.

THEOBALD SKEEL.

Result of Experiments on Horizontal Tubular Boiler at Brooklyn Navy Yard: Printed by order of the Board. Philadelphia, 1868.

Dimensions of boiler: One horizontal return tubular boiler with two furnaces, each 3 ft. wide \times 3 ft. 5 in. high \times 7 ft. 3 in. deep. Grate varied from 12 square feet to 36 square feet. Heating surface, 950 square feet.

EXPERIMENTS.

Combustible burned in 48 hours.	Combustible burned per sq. ft. of grate per hour.	Economy.
20.368	17.7	11.5
20.991	12.2	11.1
22.176	21.9	11.2
22.685	7.8	12.6
12.328	19.0	11.3
12.470	7.9	12.5
6.300	8.2	12.4
6.480	3.8	13.1

Mean high rate combustion.		Mean low-rate combustion.	
Combustible per hour per sq. ft. grate.	Economy.	Combustible per hour per sq. ft. grate.	Economy.
12.7	11.6	12.2	11.1
21.9	11.2	7.8	12.5
19.0	11.3	7.9	12.5
8.2	12.4	3.8	13.1
(Mean) 16.5	(m.) 11.6	(Mean) 8.4	12.3

Difference in favor of slow combustion, 6 per cent.

Locomotive with Unequal Cylinders.

WORCESTER, Sept. 19, 1877.

TO THE EDITOR OF THE RAILROAD GAZETTE:

After my last letter [page 385, Aug. 24] was mailed it occurred to me that a few words were omitted in the first part. It should read as follows, viz.: "Two steam cars have been running on the Worcester & Shrewsbury Railroad under like conditions of labor several years, one of them having equal pistons 6 in. in diameter, and working like an ordinary locomotive; the other has unequal pistons, 5 and 8 in. in diameter, the smaller exhausting its steam into the larger one, or both using high steam at the option of the engineer. The cars are much alike as to their weight and size, and were built by the same party."

F. G. W.

Working Single-Track Railroads in India.

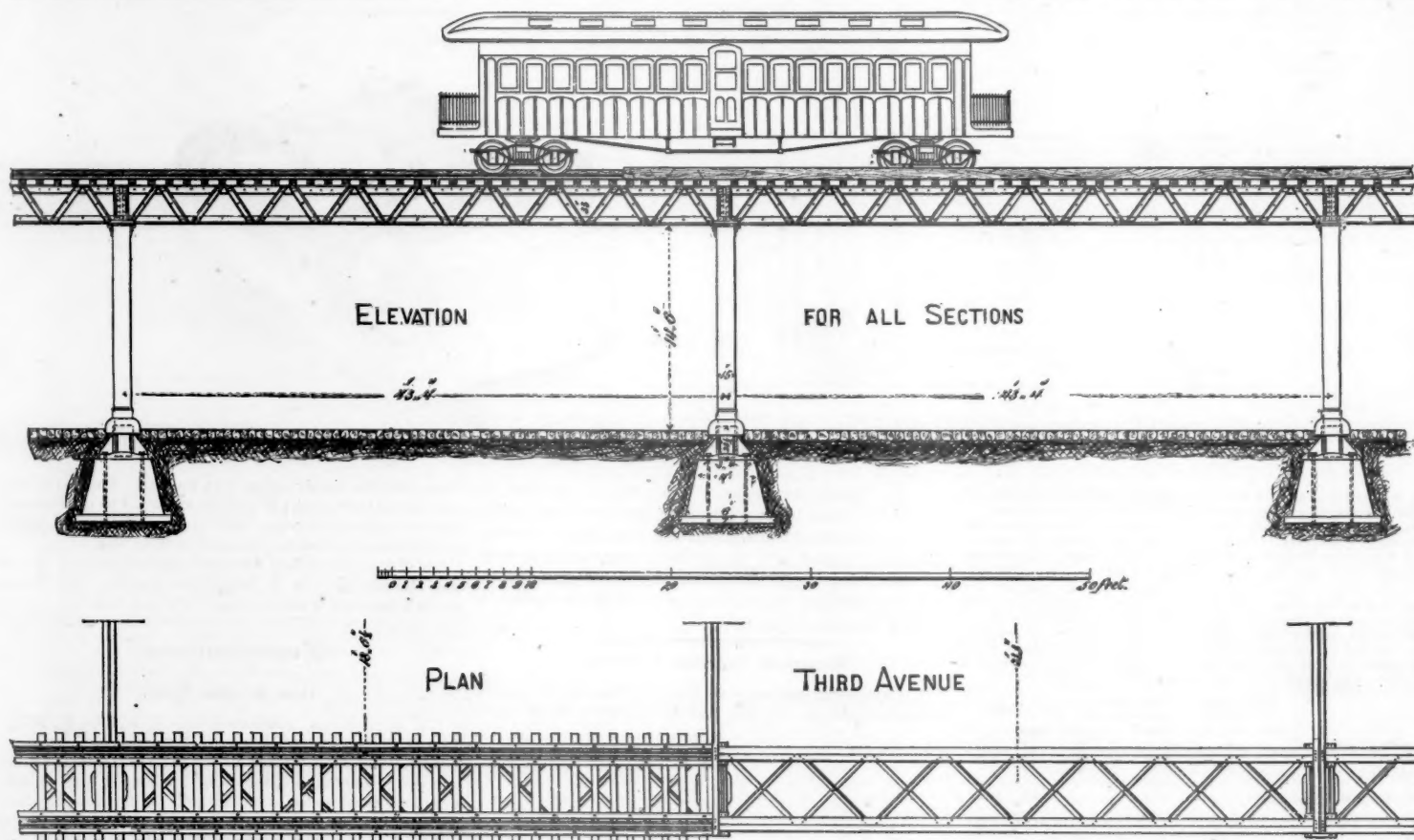
The importance of a really reliable system of "single-line working" is highly necessary for India, for out of 6,764 miles open, only 768 are "double lines," so nearly 6,000 miles of our Indian railways are "single lines," and it is highly probable that all future lines that are to be constructed will also be single roads.

We know of no better protection for single-line working than the "staff system," but over long lengths of line ranging in distance from 400 to 1,000 miles, with stations having intervening distances of from 8 to 22 miles apart, the staff system could hardly be adopted, as the delays would be enormous, and the power to control a large amount of traffic—especially of a varied type, running at different speeds—would be almost lost. The general system adopted is "line clear." One or two railways still maintain that most unreliable system of running by "time-table," which is simply a system in which every body depends upon somebody else, and in which all system of check or control is lost, should great irregularity occur in the running of trains. To this system alone, and the loose way in which the Madras Company's regulations were enforced, and to no other cause, do we assign the accident near Amboor Station last Christmas.

Our reason for alluding to the above, is to call attention

inquiry or reply book; these are copied by the telegraph clerk into his books; these books are in duplicate and each inquiry message received is fastened to the leaf from which the duplicate reply is taken. At the station from which the train is started the message is first received by the telegraph clerk, entered in his book, in duplicate, and the one from clerk is handed to the station master, who signs an acknowledgment of the receipt and time received. On receipt of the "line clear" the front of the telegram is filled by the telegraph clerk, but the authority to proceed is indorsed at the back by the station master, as follows: "To driver of No. —" (up or down train, as the case may be): "proceed to such a station," signed by station master. But this message the station master must not give to the driver, but to the guard, who reads it, etc.; and as soon as he (the guard) is ready he delivers the message to the driver, who after reading it, etc., proceeds. Now, no driver on a single portion of the East India Railway will leave before he receives the "line clear:" he also holds instructions to note whether the signals are not lowered for an approaching train, or that no danger signals are exhibited to his train.

We have received a neat example of this working: recently the telegraph at an intermediate point failed, and an up goods had to go in; but at the station a through wire passing two others could obtain a message from the third. The through line clear was given, but at the second station it was necessary to stop the up goods, to save one hour's detention to a down passenger due to start from the third station; between No. 2 and 3 telegraphic communication was established, as the native station master at No. 3 telegraphed to the native station master at No. 2, "To detain up goods at yours and give 'line clear' for up passenger"—securing down goods driver through line clear. The "line clear" was given: "Up goods detained here;" "Line is clear for up passenger." This according to rule was not sufficient—a second time the electric current went to work. "Have you secured down goods driver through line clear?" On receipt of this the baboo at No. 2 asked the down goods driver for his "line clear," although he had obtained his signature to the previous one sent, and informed him the reason for his detention. As soon as the down goods driver's message was secured by No. 2, he replied, "I hold possession of down goods driver's through line clear." It was then known that it was safe for the up passenger to proceed. Here we illustrate the advantage of discipline. It is not only the "line



ELEVATION AND PLAN OF PROPOSED STRUCTURE FOR THE NEW YORK ELEVATED RAILROAD.

Result of Experiments of Experimental Boiler at Brooklyn Navy Yard. Engineer's Researches by B. F. Isherwood, Vol. II.

Description of boiler: One return tubular boiler with one furnace, 6 ft. 7 in. wide \times 2 ft. 2 in. high \times 5 ft. 2 in. long. Grate surface varied from $10\frac{1}{2}$ to $2\frac{1}{2}$ square feet. Heating surface, 150.8 square feet.

EXPERIMENTS.

Combustible burned in 48 hours.	Combustible burned per sq. ft. of grate per hour.	Economy.
6.687	21.60	8.03
6.992	13.48	8.34
4.323	20.1	8.17
4.861	9.4	9.50
2.516	12.13	9.68
2.488	4.74	9.30

Mean high rate.		Mean of low rate.	
Pounds of combustible per sq. ft. of grate per hour.	Economy.	Pounds of combustible per sq. ft. of grate per hour.	Economy.
21.5	8.03	13.5	8.34
20.1	8.17	9.4	8.95
12.2	9.68	4.7	9.30
(Mean) 17.9	8.63	9.2	8.86

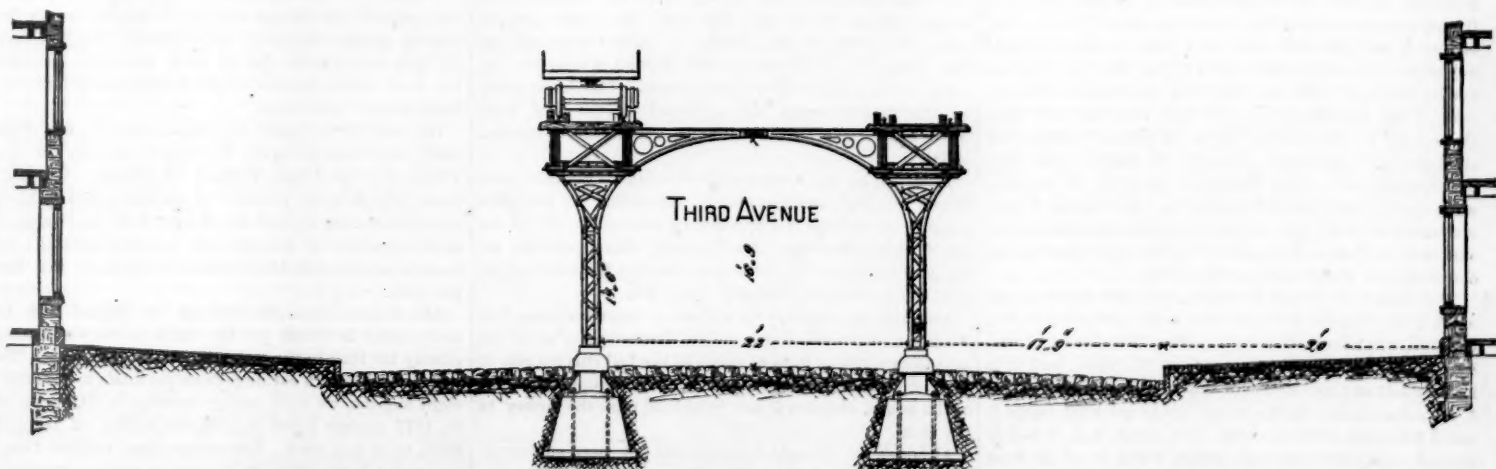
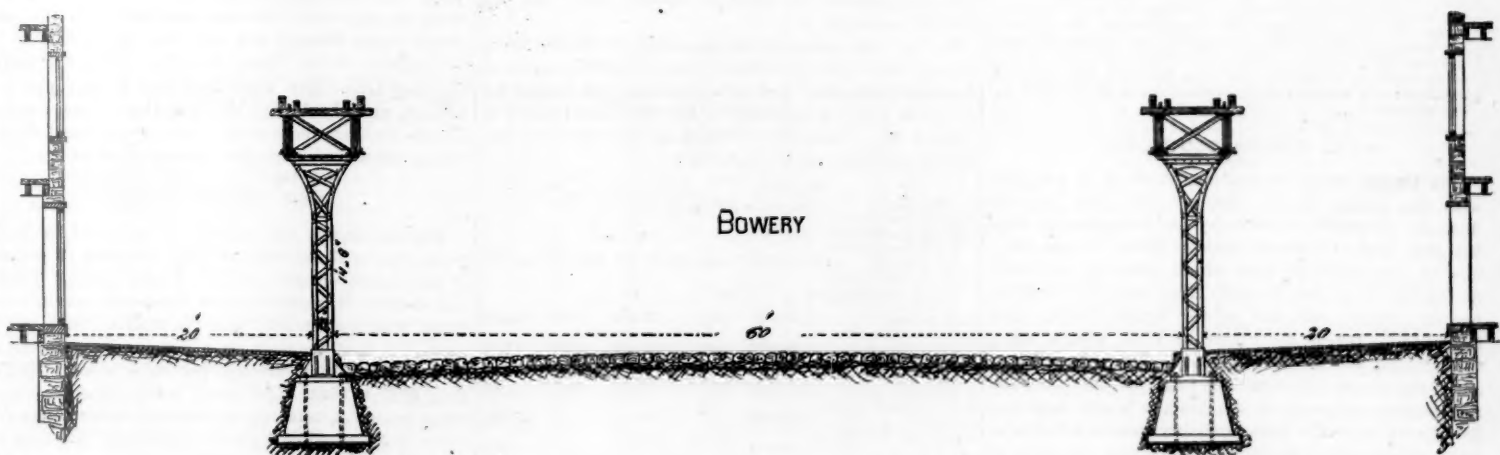
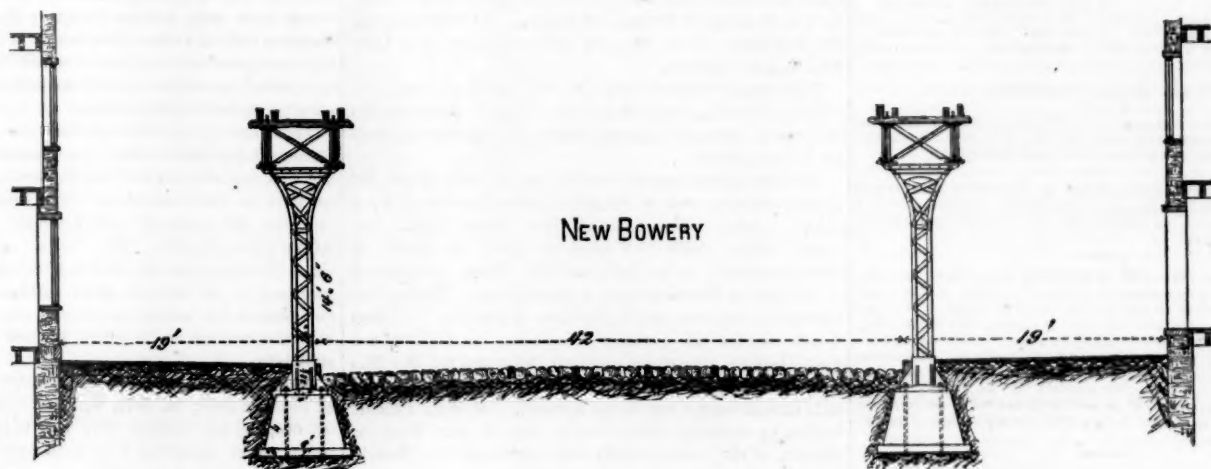
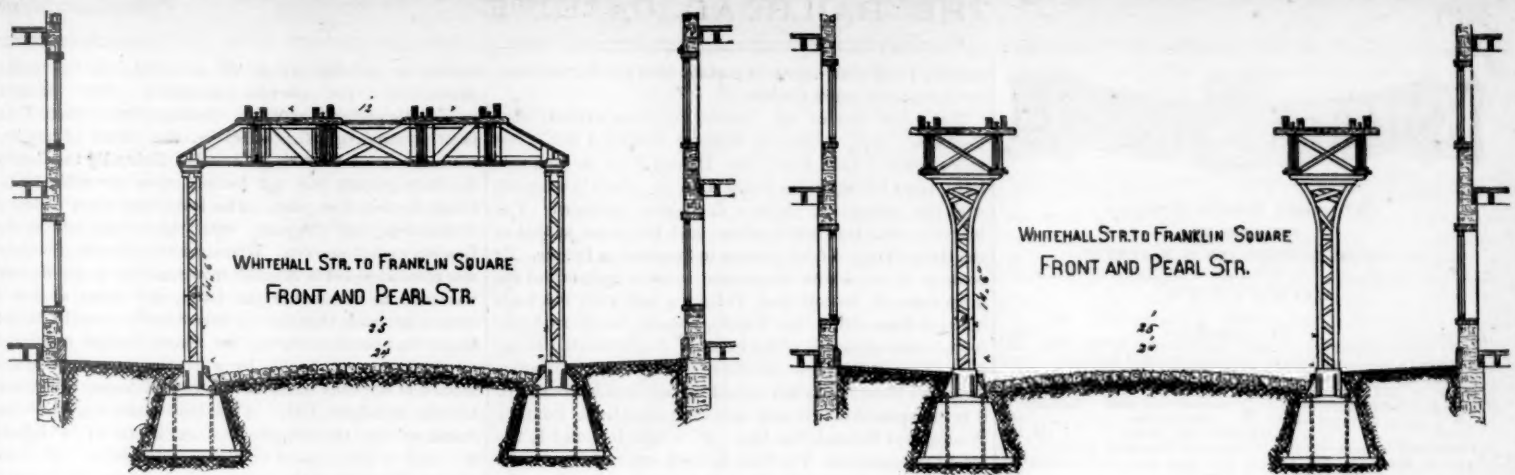
Gain in favor of lower rate of combustion, $2\frac{1}{2}$ per cent.

to the manner "line clear" is worked on the East India Railway; also how discipline is thoroughly enforced. Some years ago the "time-table" system, we are informed, was in force; but the numerous failures, as well as collisions that occurred, coupled with the hairbreadth escapes, rendered it necessary to adopt another system. Mr. Batchelor adopted the "line clear." This system is worked by telegraph; for example three stations, A, B, C, on a single line working under the "line clear" system; the following rules are adopted before a train can pass from A to B, or vice versa: The station master sends a message; each message is numbered consecutively, and each reply sent must refer to the number or numbers of the inquiry message. Presuming the line from A to C to be the up direction, and the station master at A wishes to send a train to B. A inquires, "No. 1—(the consecutive number of his message for that day) Is line clear for No. — up train? No — down train arrived at this (such a time)." B replies, "No. 1 (the consecutive number of B's messages for that day), your No. 1 line is clear for No. — up train." When this train leaves A for B, A telegraphs to B, "No. — up train left this at (time)." B, on the receipt of this message, wishing to send this train on to C, sends on another similar inquiry telegram to C, noting the time this train left A, thus giving C a guide as to the probable time the up train will reach B. Now presume C has either despatched a down train to B or asked a "line clear" for down train to B. B's inquiry message has to be as follows: "No. — (consecutive number of inquiry message) On arrival of No. — down train (the train en route from C to B) will line be clear for No. — up train left A at (time)?" C's reply is: "No. 2 your No. 2" (these numbers refer to consecutive numbers of reply and inquiry messages). "On arrival of No. — down train at yours (B's) line is clear for No. — up train." Each of these messages pass through two independent persons at one station, and four independent persons at the station the train to which the line clear refers to starts from. Each message is entered in the station master's

clear," but the other precautions, telegraphic and by signals, which are strictly enforced, that show the utility of this system. Rules are made—and enforced, and hence check with its counter-check established, that makes this system trustworthy—and, next to the "staff system," we know of no other which will ensure safety on single lines as the "line clear." We hope it will be fully established on all our Indian lines, and its regulations enforced, for unless the entire system is adhered to, failure must result—when economy steps in, and removes some of the safeguards now surrounding the present system, as worked on the East India Railway and several State lines.—Indian Railway Service Gazette.

—Capt. Charles A. Woolsey, General Superintendent of Ferries for the Pennsylvania Railroad Company, died at his residence in Jersey City, N. J., Sept. 21, after a long illness. Capt. Woolsey was born in 1809 and did his first work as assistant to his father, who ran a ferry between New York and Paulus Hook (now Jersey City) and whose fleet consisted of a single periauger. Subsequently he was employed on some of the first steamboats around New York and in 1846 was made Superintendent of the ferry between New York and Jersey City, then run by the Associates of the Jersey Company and afterwards by the New Jersey Railroad Company. This position he retained until the lease of the New Jersey road to the Pennsylvania, when he was appointed to the office he held until his death.

—Horace F. Smith, General Freight Agent of the Memphis Line of the Louisville & Nashville Railroad, was reported to have been drowned on May 30, he having fallen overboard from a skiff on the Mississippi River. It is now said that Mr. Smith was not drowned, but has been found alive in Galveston, Tex., and that his reported death was for the purpose of securing \$25,000 for which his life was insured. Mr. Smith was well known among railroad men, and had always borne a good reputation.



TRANSVERSE SECTIONS OF PROPOSED STRUCTURE FOR THE NEW YORK ELEVATED RAILROAD.



Published Every Friday.

CONDUCTED BY

S. WRIGHT DUNNING AND M. N. FORNEY.

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Editorial Announcements.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

THE CANADA SOUTHERN.

The Canada Southern Railway, which, it is reported, with the consent of its creditors, will soon have its financial difficulties settled by an arrangement with the New York Central & Hudson River Company, is one of four different lines which cross the peninsula of Ontario from the Niagara River to the Michigan border. There was and is one trunk line to carry freight to the Detroit River from the West, with a heavy traffic, amply sufficient to support one line across Canada, and if the Canada Southern had been the first and had remained the only road of the kind, it would doubtless have been one of the most profitable lines in America, as its alignment and gradients were calculated to render it more efficient as a carrier of through freight than any other of the Canada lines—than almost any other line in America, in fact; for there is scarcely any other railroad anywhere of equal length which has so light grades and so few and easy curves. It was not, however, the first, but the fourth of the Canada lines, and it was, moreover, completed when the lines further west had made such alliances that a new road of any kind could not hope to get much traffic from them. However, it must not be assumed that the road was undertaken blindly, without any apprehension of the fact that the Michigan Central was for the time an ally of the Great Western, that the Lake Shore had a line of its own to Buffalo, and that the through traffic of the Wabash, if it could be secured, would not of itself support a railroad. The Canada Southern was really only one half of a proposed line intended to extend from Buffalo through to Chicago, and thus tap the Northwestern traffic at its headquarters.

The Chicago & Canada Southern, however, which was to extend the Canada Southern from the Detroit River to Chicago, was never completed. About 70 miles of it were built across the southeast corner of Michigan, and it is left without any connection of importance.

Thus the Canada Southern was left to get what traffic it could from the existing lines. We speak as if it had to depend solely upon through traffic, which is not far from the fact, as there are no towns of importance on its lines, and only a very narrow strip of country which is nearer to it than to other roads, while all of that country can reach

another road, with more important towns at the stations, by going a few miles further.

The main line of the Canada Southern extends from Fort Erie, Ont., (opposite Buffalo) westward but a few miles north of Lake Erie to the Detroit River at Amherstburg, some twenty miles below Detroit, where it connects with the unfinished Chicago & Canada Southern. The length of this line is 229 miles—just the same as that of the Great Western from Detroit to Suspension Bridge. To connect the road with the existing railroad system and the large cities of Detroit and Toledo, a new road was built between these cities—the Toledo, Canada Southern & Detroit—close alongside of the existing line belonging to the Lake Shore & Michigan Southern. This road is 57 miles long, and though it is not owned by the Canada Southern, it is indispensable to it now, as it cannot get traffic from the West except through this line. It is thus included in the recent arrangement. The Canada Southern, however, works two branches in Canada which it could very well do without. One of these, which it owns, is a line from St. Thomas west to the St. Clair River, opposite St. Clair, built like the main line as an outlet to a proposed line across Michigan which has never been built; the other, the Erie & Niagara road, was leased after the road was completed to Fort Erie to give it access to Suspension Bridge. It extends along the west bank of the Niagara River 31 miles, from Lake Erie to Lake Ontario.

The Canada Southern thus has 323 miles of road, and with the Toledo, Canada Southern & Detroit there are 380 miles to be supported almost entirely by the through traffic across Canada.

The debt of the Canada Southern amounted to \$9,000,000 of first-mortgage and \$1,500,000 of second-mortgage 7 per cent. bonds. No interest has been paid on these since 1873. There is also a debt of \$800,000 secured on the bridge which crosses one channel of the Detroit River opposite Amherstburg. To pay the interest on this debt (saying nothing of past-due coupons) would require net earnings amounting to \$791,000 per year, leaving out of the question the rental for the Erie & Niagara road. This would be at the rate of \$2,440 per mile of road—not a very large amount, but very difficult to earn by through traffic alone, even if very large in amount, at the rates current of late years, and the Canada Southern has had to put up with dribbles, as it were, coming from the Wabash and the roads terminating in Detroit, all of which had other outlets of longer standing. For the year ending with June, 1876, the expenses nearly equalled the earnings, the net earnings being reported as \$17,546. The gross earnings are much greater now than then, but still are not large.

By the new arrangement, a new issue of \$14,000,000 of 30-year bonds is to be made, bearing 3 per cent. interest for three years, and 5 per cent. thereafter, this interest for 20 years being guaranteed by the New York Central & Hudson River Company. With these new bonds the following old issues are to be retired:

Old bonds.	Am't out- standing.	Rate.	Amount of new bonds.	Yearly int. on new bonds. Till 1880. After.
Canada Southern first-mortgage bonds, issued 1871 for 36 years.....	\$9,000,000	par	\$9,000,000	\$270,000 \$450,000
Canada Southern second-mortgage bonds, issued 1873 for 20 years.....	1,500,000	31%	475,000	14,250 23,750
Canada Southern bridge bonds.....	800,000	par	800,000	24,000 40,000
Toledo, Canada Sou- thern & Detroit first-mort. bonds.	1,400,000	70	980,000	29,400 49,000
Erie & Niagara leas'd branch.....	450,000	50	225,000	6,750 11,250
Michigan Midland bonds.....	400,000	25	100,000	3,000 5,000
Totals.....	\$13,550,000		\$11,580,000	\$347,400 \$579,000

The balance of the issue (\$2,420,000) is reserved to retire floating debts and increase the equipment.

The guarantee of the New York Central will give the new bonds an undoubted value. But it will be observed that this guarantee does not extend to the principal, nor to the interest for the last ten years the bonds have to run. The value of the bonds, so far as the payment of the principal is concerned, will depend wholly on the value of the railroad thirty years hence. The latest price for the first-mortgage bonds quoted on the New York Stock Exchange after the announcement of this agreement is 58½.

However, by this arrangement the Canada Southern will have a very light interest charge, amounting to but \$912 per mile of road for the first three years and to \$1,520 for the 27 years following. The interest charge will be reduced \$948,500 as the debts now stand to \$420,000 for the next three years and \$700,000 thereafter.

This can be provided for without a large business; but when the principal becomes due, the company must be able to earn net at least as much as the full current rate of interest at that time (whatever it may be) upon the face of the bonds, else it will not be able to raise the money to pay them.

Although the Canada Southern has not been an important road as regards the traffic it has secured and the earnings it has made, it has had some decidedly important effects. Not only has the value of the capital invested in it

shrunk so greatly (about 60 per cent., as the market prices of the bonds indicate), but directly in consequence of its construction there has been a much greater effect on the value of another road, the Great Western of Canada. Naturally the Canada Southern project was not looked upon favorably by the Great Western Company. The latter was then a strong, dividend-paying company, with much influence in the London money market. Whenever the Canada Southern was recommended to English investors, the Great Western was able to discourage the latter, and when at last it seemed probable that the Canada Southern would be able to get the necessary capital, the Great Western undertook to checkmate it finally by a costly movement which seemed at the time likely to destroy all hopes of success for the Southern line. This movement was the construction by the Great Western itself of a branch it did not need close alongside of the eastern 125 miles of the route marked out for the Canada Southern, and with the same terminus, opposite Buffalo. This was intended to prove that there was no need of the Canada Southern, and it was expected that then no capitalist would venture to invest in it. Very likely it had this effect in England, where but few Canada Southern bonds were sold; but the company then turned to this country, and, at a time when bonds of much less promising enterprises were selling freely, it had no difficulty in marketing the whole issue of its first-mortgage bonds at good prices and in a short time.

Thus the Great Western had put millions into the Glencoe Loop Line to keep the Canada Southern out of the way, and after all the Canada Southern was built about as soon as the Loop Line. The business was divided and the old company had a greater mileage to support with a reduced traffic. This helped to bring down the Great Western from its condition of great prosperity a few years ago to its present great embarrassment, when for two years it has had to raise money on capital account to meet the interest on its bonds, the net earnings being insufficient.

In 1872, with a capital of \$32,500,000, it had \$2,175,000 of net earnings; in 1876, with the capital increased \$48,000,000, the net earnings were less than \$1,000,000. The prices of its securities have gone down correspondingly, and the property now, judging by the prices of its securities, is worth some \$15,000,000 less than before the Canada Southern was begun. The depreciation in the Canada Southern securities is something like \$8,000,000, so that altogether this seems to be one of the very common cases where two railroads, if they are too near together, are worth less than one. Of course the decline in the profits of the Great Western has not been due solely to the competition of the Canada Southern, and the expense of the Loop Line. But these have had a large part to do with it, and should the Michigan Central once make the Canada Southern its close ally, probably the Great Western would suffer much more than it has yet had to.

Eight Months' Earnings.

August earnings are reported in our table for 26 railroads, having 13,525 miles of road, or about 17 per cent. of the total in operation in the United States. Twenty-one of these 26 roads show an increase in earnings compared with August, 1876, and the total increase is 4 per cent., but as it was made on a larger mileage it does not make an increase in earnings per mile, which in fact fell from \$527 to \$520. The heavy crops began to have an effect in August, bringing up earnings about to the average of last year, while for some months they had been falling behind. Our tables for the different months have shown decreases as follows, comparing 1877 with 1876:

	Decrease. 5.1 per cent.	May.....	Decrease. 12.0 per cent.
January.....		June.....	18.7 "
February.....	13.4 "	July.....	9.8 "
March.....	5.0 "	August.....	1.3 "
April.....	7.4 "		

We have not had the same roads every month, it is true, but probably the change in favor of August would be at least as great as shown by these figures if we had reports for each month from the 26 roads reporting for August; for it is when returns are most unfavorable that reports become most infrequent.

Our table for the eight months contains reports from 24 roads—the same as report for August, lacking the Grand Trunk and the Great Western of Canada. One-half of these only show an increase in earnings, and altogether, notwithstanding an increase of 5 per cent. in mileage, they show a decrease of 4.6 per cent. in gross earnings, while in earnings per mile the decrease has been no less than 9 per cent.

The comparison of the earnings for August with those of the same 24 roads for the eight months shows most clearly the turn in the tide. Subtracting the Grand Trunk and Great Western earnings from the totals in our table for eight months, we have average earnings of \$3,484 per mile in 1877 against 3,849 in 1876, the falling off being thus \$365, or 9½ per cent. The change that reduces this decrease to 1.3 per cent. in August is as encouraging as a positive increase would be under ordinary circumstances.

And there can be no doubt that it has by this time be-

come a positive increase, though it must be remembered that last year for two months and a half after August the Centennial passenger traffic was at its height, enormously increasing the earnings of a few roads, and having a favorable effect on most lines.

The Northwestern railroads especially are now full of work. Complaints of a lack of cars are heard, and that not only for grain shipments eastward, but also for lumber shipments westward. This latter fact is especially significant, as it shows that the farmers are purchasing and that there is a growth of traffic in both directions. It might happen, of course, that the activity in traffic would not last; but this seems hardly possible so far as east-bound shipments are concerned, as the amount to be moved is unquestionably extraordinarily large. With west-bound shipments it is different. Heretofore, since 1873, there have been several periods when the traffic was so large that merchants were much encouraged to hope that good times were returning; but in every instance the period of brisk business and consequent heavy westward shipments has been very short. This fall it has been longer, we believe, than before since 1873; but it will have to last some time yet to be very satisfactory. With the prospective heavy business in the exportable products of the country, however, there is reason to expect a heavier freight traffic in both directions than has been had since 1873-74. Passenger traffic probably will not be much affected. It does not vary greatly from year to year in the well-settled parts of this country, and even with a decided increase in prosperity, it is not likely that the business of the Centennial year will be equaled soon.

Rapid Transit in New York.

An announcement of the decision of the New York Court of Appeals with reference to the proposed elevated railroads in New York was made in the *Railroad Gazette* of last week. The projectors of these roads think that this decision removes all serious legal obstacles in their way, and the New York Elevated Railroad Company, which is the owner of the present Greenwich street and Ninth avenue line, has accordingly announced that it will receive sealed proposals until Oct. 2 for the completion of the second track for its existing railroad (now about one third double-track) between the Battery and Sixty-first street; for a double-track extension of this road along Ninth avenue from Sixty-first to Eighty-first street, west side; and for its proposed double-track road from Whitehall street through Front and Pearl streets, the Bowery and Third avenue to Fifty-ninth street, including branches to the ferries, western terminus of the East River Bridge and the Grand Central Depot, east side, comprising altogether about three miles of single and six miles of double track.

As the long-hoped-for and much-talked-of project now seems in a fair way to be carried out, the plans proposed for its construction, of which we give engravings in this number, will have special interest. Before describing these, and the reasons for their adoption, a few words about the history of "rapid transit" in New York will be of interest. We take it from the *Daily Graphic*:

"The first practical attempt to supply New York with a rapid transit road was made with an experimental half mile of elevated track on Greenwich street running from Battery place north. From that experiment the present New York Elevated Railroad, after having had a varied career, has been established. Mr. Charles T. Harvey was the originator of this experimental design, and in 1866, mainly through his instrumentality, a company was formed for testing and carrying it into effect. Under the legislative act of April 23, 1867, the 'West Side & Yonkers Patent Railway Company' which had been organized under the provisions of the general railroad laws of the State, was incorporated and empowered to construct an experimental section of railroad, one-half a mile in length, running from the Battery north on Greenwich street. The method prescribed in the act was that the cars should be propelled by means of an endless wire rope operated by engines placed below the surface of the street. The road was constructed on this plan as far as Thirtieth street, but a short trial soon demonstrated that the whole plan of working the road by means of an endless wire rope and stationary engines was a failure. The company at the same time became financially embarrassed, and public confidence in the whole structure was lost, so that complaints were constantly made against it and finally assumed the form of an indictment of the structure as a nuisance; but the case never came to trial. The road was finally sold out under foreclosure in 1872, and the New York Elevated Railroad Company was organized, and some of the parties who are at present identified with the line then became interested in it. Small four-wheeled engines, which are still used on the road, were substituted for the endless wire rope, and the structure was strengthened and extended and trains were run regularly on the road."

The year before the charter on Greenwich street was granted, a committee appointed by the New York Senate recommended the underground system of roads for rapid transit. Several charters were granted for such roads, but for some reason when the crucial test came of securing the money required to build them, they always failed. From 1866 to 1874 there was an almost continuous discussion of the relative merits of underground and elevated railroads, and it seemed as if the advocates of underground roads were doing all in their power to prevent elevated roads from being built, and vice versa.

In September, 1874, the American Society of Civil Engineers appointed a committee "to investigate the best means of rapid transit and of handling freight in and about the city of New York." That committee made an elaborate report Jan. 30, 1875. It recommended very decidedly the adoption of the elevated system in existing streets, and fortified its position by elaborate estimates of cost and of the receipts and expenses of such a road. It showed clearly that with any probable amount of business it would be impossible to pay interest on the cost of an underground road. It was the first scientific investigation into the "elements of success" of rapid-

transit roads. At the time the report was made public attention had been especially directed to the subject, owing to heavy snow storms during the winter by which the street roads had been obstructed. The report at once directed public attention to the construction of elevated railroads as the only practicable means of supplying the public need.

The present constitution of the State of New York came into force in January, 1875. It contained a clause that no special legislation should be enacted and prohibited especially the

granting of charters for the construction of street railroads in cities. All authority for the construction of rapid-transit railroads, had, therefore, to be acquired thereafter through a general law.

In June, 1875, what was known as the Husted bill was passed. This authorized the appointment of a board of five commissioners by the Mayor of New York, who were authorized to fix the routes and determine the plans of structure of rapid-transit roads. Parties acting under the authority of this commission were required, however, to get the consent of a majority of the property holders along the line of the proposed road; failing in this, the judges of the Supreme Court of the First District of the State of New York were authorized to appoint another commission to determine whether the road should be built notwithstanding that a majority of the property holders did not give their consent. Under this law a commission was appointed in the fall of 1875, and reported early in 1876. The members of the Commission very wisely did not specify in detail what the character of the structure should be, but gave only general conditions which it should fulfill.

They selected routes, however, which are shown in the map herewith, reduced from a larger one published in the *Daily Graphic*. The route determined for the New York Elevated Company is represented in heavy black lines and that for the Gilbert Company by dotted lines.

These two companies went through all the processes specified by the Husted bill, and then attempted to construct their roads under its authority. They were at once restrained by litigation, and the issue was made that the Husted bill was unconstitutional, and that the action of the Commissioners was not according to the law. Both of these points were decided in favor of the elevated railroad companies by the recent decision of the Court of Appeals, and consequently both companies are preparing to construct their roads as rapidly as possible.

The plans adopted for the construction of these roads will therefore be of interest at the present time. On another page will be found engravings of the various modified forms of construction which the New York Elevated Railroad Company propose using for its east-side line. The plans of this company may be briefly described as the one-legged plan. The essential feature of this is, that the weight of the roadway, as far as possible, is carried immediately over the posts which support the structure. The Gilbert Company, on the contrary, in nearly all cases, intends to support its roadway between the posts on transverse girders, similar to the plan proposed for Whitehall street by the other company.

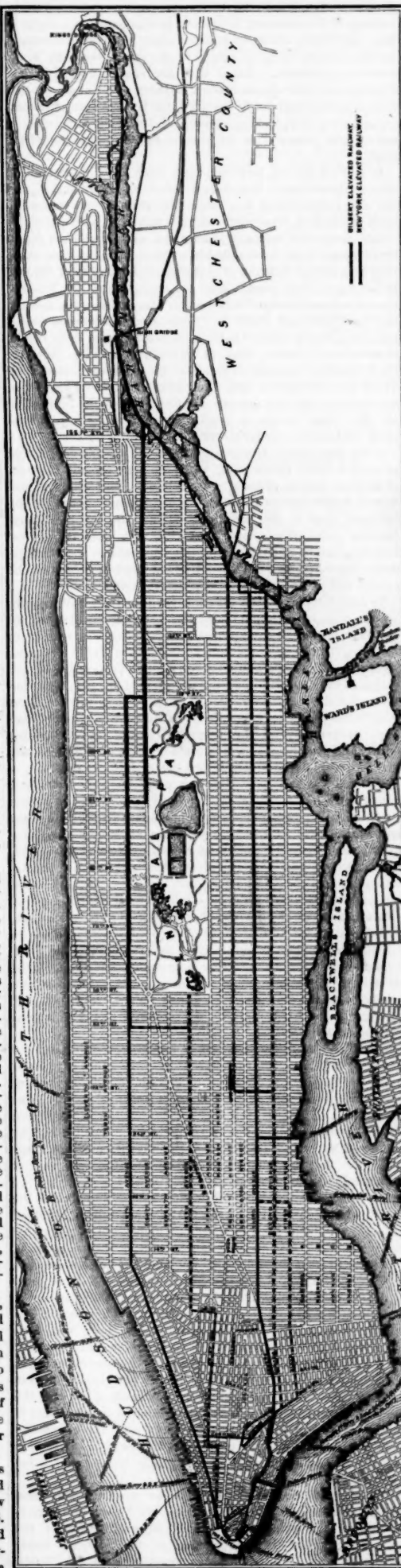
In a communication addressed to the President and directors of the New York Elevated Railroad Company, Mr. Courtwright, the Chief Engineer, states at some length the reasons which led to the adoption of the plans of which we give engravings. He says:

"Front and Pearl streets, from Whitehall street to Franklin square, being narrow, with but little room in the roadway, the columns must of necessity be on the line of the curbs. The roadway may either be spanned and the tracks carried over it, or a single track may be carried by each line of columns over the curb. In the former case the roadway will be partially covered and the sidewalks clear and unobstructed overhead; in the latter the outside of the sidewalks and the gutters will be covered and the roadway clear and unobstructed overhead; hence the alternate plans submitted for these streets. Being in the lower parts of the city, the buildings along them are occupied for business purposes only. I think, therefore, it would be far less objectionable to their occupants or owners and those using the streets to have the tracks over the curbs, and the roadway clear overhead; for whether the tracks are over the roadway or curbs will make but few feet difference, at most, that the cars will be away from the buildings on the narrow streets."

From Franklin square to the intersection of the Bowery with Third avenue along the New and Old Bowery, owing to the number of surface railroad tracks and other circumstances, the columns must be on the line of the curbs.

On Third avenue the upper stories of the buildings are occupied very generally as dwellings, and it was thus thought desirable to remove the tracks as far from the houses as possible, and as the roadways are 60 feet wide with a double line of surface horse railroad tracks in the middle, a line of columns is to be placed upon each side of the horse railroad tracks, and connected at the top by light elliptic arch girders. The track superstructure will be 17 feet or over above the grade of the surface railroads, and the columns in the roadway 15 inches square and in nearly all cases 15x18 inches when on the curb. The general average length of the spans will be 43 ft. 4 in., the girders made of open lattice work and 33 in. deep, and to be proportioned so that no part of them will be subjected to a greater strain of tension and compression than 8,000 lbs. per square inch, or a greater shearing strain than 6,000 lbs., and the maximum deflection of the girders when loaded not to exceed one fifteen-hundredth of its span. The columns will consist of two 15 in. rolled channel beams united by lateral bracing, consisting of $3\frac{1}{2} \times \frac{1}{2}$ in. bars riveted to the flanges of the beams. Where the track is carried over the columns the tops of the channel beams are curved outward from the centre each way far enough to support the longitudinal girders. When the track is carried on girders between the columns, the channel beams of the post are carried up straight. The lower ends of the beams will be set into sockets of cast-iron bed-plates weighing about 2,200 lbs. each. The bed-plates will be 3 ft. 4 in. square at the base and secured to masonry foundations by four anchor bolts 2 in. in diameter. The foundations will generally be about seven feet deep and seven feet square at the bottom, and are to consist of flag stones and hard burned bricks laid in hydraulic cement mortar.

The top chord of the longitudinal girders will be composed of two $6 \times 6 \times \frac{9}{16}$ in. angle bars, and the lower chords of two $5 \times 5 \times \frac{9}{16}$ in. angle bars riveted together so that each will form a T, the two riveted by double angle braces $5 \times 3 \times \frac{9}{16}$ in. at the ends of the beams and $4 \times 3 \times \frac{7}{8}$ in. in the centre, placed back to back on the outside of and embracing the T's by being properly riveted together.



MAP SHOWING LOCATION OF RAPID TRANSIT RAILROADS IN NEW YORK.

The New York Elevated Railroad is represented by black lines; the Gilbert Elevated Railroad by dotted lines.

The track will be of 4 ft. 8½ in. gauge, the superstructure consisting of Bessemer steel rails, weighing fifty pounds to a yard and laid on yellow pine cross-ties 7 ft. long by 6 in. by 5 in., to be placed ten inches apart in the clear. On each side of each rail longitudinal guard timbers are to be placed. The inner ones are to be 5×8 in. and the outer ones 5×10, the ends to be securely spliced together, and each guard will be bolted to every alternate tie, and each tie bolted by two bolts to the guards. The cross-ties will be secured to the longitudinal girders by lag screws with washers at the bottom, the latter projecting under the top flanges of the girders, clamping the ties to them.

The rolling stock at present used on the Greenwich street road consists of light four-wheeled engines, an engraving of which was published in the *Railroad Gazette* of May 9, 1874. These weigh from 12,000 to 14,485 lbs. with a full supply of coal and water. The driving-wheels are 33 in. in diameter, placed five feet apart. It is proposed to increase the weight of the engines to 16,000 lbs.

The last passenger cars purchased weigh when empty about 16,000 lbs.; are 41 ft. 6 in. long over the platforms; the bodies are 35 ft. 6 in. long by seven feet wide, and seat 48 passengers. It is thought that the cars can be made lighter.

At first sight the impression produced by the appearance of the one-legged structure, as it has derisively been called, is that it is lacking in lateral stability. This, however, is not the case, as the structure is subjected to very little lateral strain, the chief difficulty being to give sufficient longitudinal stability to resist the action of the momentum of the train when the brakes are applied. This difficulty arises from the necessity of allowing space between the ends of the girders for their expansion and contraction, and therefore such strains cannot be transmitted through them to more than two or possibly three columns. To provide for this the longitudinal guard timbers, which are not subject to expansion by changes of temperature, are securely bolted through the cross ties and to the flanges of the top chord of the girders. In this way the longitudinal strains are distributed over an indefinite length of the structure.

In deciding upon the plans which have been adopted, the New York Elevated Railroad Company very wisely sought, besides the aid of its own engineer, the advice and assistance of other experienced persons in the profession, whose opinions have been published with the communication already referred to. We have only space for a few extracts.

Messrs. Thomas C. Clarke, Willard S. Pope and J. H. Linville say: "There can be no doubt of the complete stability of your structure to resist any kind of force, in any direction, to which it may be subjected. It is an iron viaduct whose proportions have been designed in the same manner as hundreds of others in daily use in this country."

Messrs. O. Chanute, Charles H. Fisher and Wm. H. Brown, having examined the calculations of strains, say: "We find not only that the structure is amply strong to carry the moving loads to which it will be subjected by the proposed rolling stock, with a large factor of safety, but that it will also be safe against the end thrust that might be produced by a train leaving the rails."

The number of passengers carried per year by the present Greenwich street road has been as follows:

1873.....	640,000	1876.....	2,020,000
1874.....	810,000	1877.....	3,150,000
1875.....	910,000		

The increase for the last year is thus 55 per cent.

The St. Louis, Iron Mountain & Southern.

When this company first asked the indulgence of its bondholders in a circular dated Feb. 23, 1875, its funded debt was \$24,829,000. The circular set forth the necessity of paying off a floating debt of \$2,266,000; but the total floating debt at that time was \$3,300,747. The bondholders were asked to fund coupons amounting to \$2,289,000, and with this assistance the company expected to retire the floating debt, or at least all but such small amount as is likely to be incurred in the ordinary working of a railroad, nearly or quite balanced by what may be called floating assets. The bondholders accepted this proposition, which was recommended by the agents of the Barings, who owned or represented the owners of about 28 per cent. of the total funded debt, and had representatives in the board of directors.

When the time came to resume the payment of coupons, Nov. 1, 1876, it was announced that the company was unable to pay them in full, and half payment was tendered, and the coupons were returned to the bondholders with the amount paid indorsed thereon. It had been expected that \$2,266,000 of the floating debt would be retired by that time, but the amount actually retired was about \$1,300,000. Thus, including the funded coupons, the obligations of the company had been increased by nearly a million under the funding agreement.

When this result was made known, it was apparently accepted by the bondholders, and by the Barings among them, Mr. Ward saying in a communication to the bondholders, "It has seemed to me that the directors have found the wisest solution of the problem that presents itself, in paying such portion of the interest as can be met consistently with the continued reduction of the floating debt, while keeping up the efficient condition of the property."

When this default was made, no plan for the future was presented to the bondholders, so far as we know, but it seems generally to have been expected that the company would at least continue to pay half of the interest as it accrued. It did not, however. When the second coupons after those funded became due no part of them was paid, and now, in addition to the \$2,289,000 of unpaid coupons funded, about half as much is due and not funded, the whole adding about \$5,000 per mile to the mortgage debts of the company.

Before the second coupon became due, the Wards, agents for the Barings, who represent, as has been said, more than seven millions of the bonds, decided that it would be for the interest

of the bondholders to change the management of the company. They seem finally to have been convinced that the road was not likely to yield a margin of profit over the interest charges, such as could be applied for the benefit of the stockholders; that therefore the total product of the railroad was due to the bondholders, and that the latter ought to control the management of the property, in which they alone had a real interest. This had been provided for at the time of the arrangement with the bondholders, when, as a published contract shows, the President and Vice-President of the company transferred to the Barings 25,000 shares of their stock in trust, with the right to vote upon them until six months after payment of coupons should be resumed on all classes of the bonds included in the funding agreement. These with the shares owned by the Barings and their clients made a majority of the stock, so that if payments should not be resumed, the bondholders, apparently, had the power, at their pleasure and without foreclosure or other legal proceedings, to assume the management of the road.

It is well known, however, that when they undertook to vote on these shares, they were opposed by an injunction, and the old management was continued through the failure to have an election, injunctions being obtained by both parties.

Last month the company presented a second scheme for an arrangement with the bondholders. According to this, there is to be a further funding of coupons amounting to \$1,736,000, including all those unpaid since the expiration of the funding agreement, and about \$700,000 more. In addition the holders of consolidated and Cairo & Fulton second-mortgage bonds, and the deferred interest certificates belonging to these bonds, amounting to more than \$4,000,000, are asked to exchange them for simple unsecured bonds of the company, interest on which shall be payable only when there shall be a surplus of net earnings over the amount required to pay the interest on all the other bonds—a bond about equivalent to preferred stock without the voting power of such stock.

If this plan should be carried out and the floating debt should actually be paid off under it, when the time for full payment of interest comes, about a year from now, the company will have a funded debt of about \$30,000,000, which is about \$5,500,000 more than at the beginning of 1875, just before the first funding proposal was made, and when with what was equivalent to a loan of \$2,300,000 from the bondholders the management expressed its confidence that its floating debt could be retired and its financial condition made sound.

To earn interest (nearly all gold) on this debt will require net earnings of \$3,110 gold per mile. During the first half of this year, much the most prosperous period in the history of the road, the net earnings were at the rate of \$2,375 per mile. Thus to be able to earn interest on all this proposed debt, the profits of the road will need to be increased 31 per cent. beyond what they have ever been heretofore. It will not, however, be necessary to make these earnings to save the road from bankruptcy, for the proposed change of consolidated bonds and certificates into income bonds would reduce the fixed interest charge by about \$280,000, or \$413 per mile.

Since the company made this last proposition to the bondholders, Messrs. S. G. & G. C. Ward, attorneys for Baring Brothers & Co., have addressed a statement to the bondholders and stockholders, in which they discuss at length the questions at issue between them and Messrs. Allen and Marquand, the President and Vice-President, chief stockholders and actual managers of the Iron Mountain Company. Copies of letters and contracts are given to establish the Barings' right to vote on the stock of Allen and Marquand held in trust by them, and the failure of the previous plans of the management to render the company solvent is given as a reason why the bondholders should not make further concessions, but should insist on taking the management of the property into their own hands, to secure which a foreclosure suit is now pending, brought by the trustee of the consolidated mortgage at the instance of the Barings.

The Wards' circular also takes exception to the statement made by Allen and Marquand that interest would have been paid in full after the expiration of the old funding agreement last November but for the protest of Barings' agents. The proposition, the Wards say, was not to pay interest in full on all the bonds, but on all but those held by the Barings and by Allen and Marquand, and it was to this that Barings' attorneys objected. Further, objection is made to the last sale of \$1,113,000 of consolidated bonds at 40 "flat."

The important statement of the circular, however, is that the bondholders represented by the Barings are fully determined to foreclose. They have brought suit under the consolidated mortgage, a majority of these bonds being in their possession, if the recent issue be excluded; but they hold also more than \$3,000,000 of Cairo & Fulton first-mortgage and more than \$2,000,000 of St. Louis & Iron Mountain second-mortgage bonds, and they declare that if there is any difficulty or delay in connection with the consolidated, they will foreclose one of the other mortgages. As there can be no question of the defaults and the legal right of foreclosure under these circumstances, it does not seem that it can possibly be prevented. Resistance by the company may cause delay, and the union of a considerable bondholding interest in opposition to the Barings may make the foreclosure and reorganization costlier—and may make it cheaper—but how it is possible to prevent foreclosure if \$7,000,000 of bonds insist on it is not easy to see.

The circular statement referred to presents the plan which those suing for a foreclosure offer for a reorganization after foreclosure. This is substantially that the funded debt shall be the principal of the mortgage bonds above the consolidated mortgage, amounting to \$21,877,000, the yearly interest on which will be at the rate of \$2,270—nearly at the rate of the net earnings for the last half year, and a dangerously heavy fixed charge to carry, we should say. The deferred interest certificates and unpaid coupons, including such as it may be thought necessary to fund in the future,

estimated at about \$700,000 not yet due, are to be funded into an income bond, with interest cumulative when the earnings are not sufficient to pay it; and the consolidated bonds into a second-class income bond, interest payable after meeting that on the other income bonds, but also cumulative. No proposition is made as to stock issues, which would control the management.

The Iron Mountain road is a fairly valuable property, with a growing business. It is, however, too heavily weighted with debt. With net earnings per mile little more than half as great as those of the leading Chicago roads which pay 8 and some times 10 per cent. dividends, it has a debt nearly twice as great. As its business grows it will require additional expenditures of capital to fit it for carrying it economically—capital which cannot be obtained on any but extravagant terms, while there is no or but little margin of net earnings over interest charges. The prospect of any surplus of profit available for dividends on the stock is extremely remote, and it certainly seems reasonable that the bondholders should desire the management of a property whose total income for some years at best must belong to them. They have already made sacrifices which have rendered it possible to retire three-fourths or more of the floating debt, and if they decline longer to refrain from exercising the rights given them by their contracts with the company, they can hardly be charged with acting hastily or with disregard for the rights of others.

The Northwestern Grain Movement.

The grain receipts at the chief Northwestern markets (St. Louis, Peoria, Chicago, Milwaukee, Duluth, Detroit, Toledo and Cleveland) have been for the period from Aug. 1 to Sept. 15, for the past five years, as follows, flour in barrels and grain in bushels.

	1877.	1876.	1875.	1874.	1873.
Flour.....	649,305	609,841	657,426	700,325	814,081
Wheat.....	12,134,746	7,188,197	10,801,045	12,719,936	18,854,338
Corn.....	16,795,063	15,768,734	8,539,845	8,329,800	15,272,594
Oats.....	4,733,808	3,826,192	5,304,329	5,807,930	9,006,121
Barley.....	983,634	695,640	676,931	811,045	1,143,691
Rye.....	974,470	434,480	455,466	275,084	481,603

Total grain.....35,601,720 27,416,293 25,777,625 27,443,795 40,708,317

It appears thus that the movement since the new crop began to move has been much larger this year than in any of the three previous years, but still 12 per cent. less than the extraordinary movement of 1873, which thus remains the largest on record. The wheat movement in 1873 was 50 per cent. greater than that of this year, though it is not probable that the crop of 1873 was as large as that of this year. That crop, however, was unusually early, enabling farmers to thresh and ship in August to an extent never equalled before or since. The effect of prices in drawing out the crop was about the same then as now.

But leaving the phenomenal year 1873, this year shows enormous gains—30 per cent. more than last year or 1874, and 38 per cent. more than in 1875. The average receipts have been 774,000 bushels per day, more than one-third of which has been wheat. And the movement of wheat tends to increase, as will be seen by the following statement of receipts of wheat and all grains at these markets for the several weeks since July:

Week ending—	Wheat.	All grains.
Aug. 4.....	796,133	3,891,829
" 11.....	924,290	4,940,613
" 18.....	1,389,919	5,455,322
" 25.....	1,792,942	5,331,313
Sept. 1.....	2,074,692	4,986,632
" 8.....	2,169,479	5,015,253
" 15.....	2,992,291	5,751,856
Total, 7 weeks.....	12,128,768	35,601,720
Average.....	1,732,681	5,086,960

The movement has probably been more profitable to the trunk lines east of Chicago than ever before at this season of the year. They carried more in 1876 and in 1875, but they carried for less than cost then, and in 1873, when the movement was so very heavy, they carried much less than now.

Record of New Railroad Construction.

This number of the *Railroad Gazette* has information of the laying of track on new railroads as follows:

Rochester & State Line.—Extended 6 miles, to Gainesville Creek, N. Y.

Lake George & Muskegon River.—This lumber road in Clare County, Mich., is completed 7 miles from the Muskegon River.

Maple River.—Extended west by north 28 miles, to Ida, Iowa.

Omaha & Republican Valley.—Extended from Wahoo, Neb., west to David City, 42 miles.

Tyler Tap.—Completed from Tyler, Tex., north by east to Big Sandy, 20 miles.

Utah Western.—Extended from Tooele, Utah, south by west to Stockton, 9 miles. It is of 3 ft. gauge.

This is a total of 112 miles of new railroad, making 1,335 miles completed in the United States in 1877, against 1,599 reported for the corresponding period in 1876, 761 in 1875, 1,082 in 1874, 2,691 in 1873, and 4,765 in 1872.

THE AVERAGE PASSENGER TRAIN LOAD is much smaller than most people—even railroad men—suspect. On few of our trunk lines is it more than 60 passengers, and even in times of extraordinary travel it is comparatively small. Last year the trains to and from Philadelphia, were very many of them as large as could be hauled and frequently crowded with passengers, yet the reports made after the close of the exhibition gave the average passenger train load arriving at the West Philadelphia station of the Pennsylvania Railroad during the Centennial season (May 10 to Nov. 10, 1876) as 111 passengers, and the average car load 10.6 passengers; the averages of the arrivals at the Centennial station were 116 per train and 18.5 per car.

RAILROAD WAGES IN ENGLAND are reported by the *Railway Service Gazette* to be on an average about 25s. (\$6.08) per week for "pointmen," \$6.80 for "shunters," \$7.30 to \$8.52 for pas-

senger "guards" (conductors), \$7.78 to \$8.28 for "goods guards" (freight conductors) and \$10.21 for "engine drivers." The *Railroad Service Gazette* adds: "These amounts are probably in some cases added to by over time, while in many others they are not reached, owing to loss of time through illness or temporary disablement from accident."

EXPORTS FROM SOUTHERN PORTS have the disadvantage of higher freight rates, and though this does not prevent heavy exports of cotton from these ports, it has a much greater effect on grain and other products grown at a great distance from these ports. Recent quotations for cotton freight give rates as follows to Liverpool: From New York, $\frac{1}{4}$ d.; from Savannah, 7-16d.; from New Orleans, $\frac{1}{4}$ d. If the same proportion should be preserved for grain, it would cost more to ship grain to Liverpool from New Orleans than from Chicago.

THE INDUS VALLEY RAILWAY, according to a letter from one of its men in the *Indian Railway Service Gazette*, pays its engineers of the first class \$69.30 (150 rupees) per month, those of the second class \$60, to firemen \$30.

The Fast Time on the Canada Southern.

There was only one stop in the one hundred and eleven miles that separates St. Thomas from Amherstburg on the Canada Southern Railroad. The engineer, Macomber, was surrounded by an admiring throng, and passengers and railroaders commented on the handsome appearance of his iron steed. The steam gauge just before starting showed a pressure of 85 pounds, a moderate figure for a locomotive. Conductor Crawford sang out "All aboard!" and the special train with Bishop Borgess on board pulled out from St. Thomas at 5:27 p. m. A grand hurrah from the platform signalled the departure.

Once the bridge was cleared Macomber "let her out." Bishop Borgess in the palace-car, after receiving the salutations of the gentlemen of the party, sat down, and dinner was served to him and his traveling companions upon a small table. No one noticed any particular motion in the car. There was no disarrangement of the dishes, crowded and small as was the table. The hum of the train was somewhat sharper than usual, and the rushing air against the windows sounded like the sweeping of a rain-storm. Otherwise there was no indication of unusual speed to a person in the car.

Presently watches were taken out and observations made. The reverend clergy, as well as the more worldly laity, became interested.

"A mile in sixty seconds!" ejaculated one.
"Shortly after—A mile in fifty-eight seconds!"
"Again—A mile in fifty-seven seconds!" and the enthusiastic Frank Moran, with a cheer that intensified the excitement, announced that his stop-watch marked but fifty-five seconds to the mile.

Before one could point out an object it had vanished. Before a question could be asked and answered a mile had sped; five miles were traversed in the interval while cigars were handed around and lighted by as many men. A flock of blackbirds flying towards the west, with all their fleetness in cleaving the air, were soon left behind and lost to view.

The wires on the telegraph poles swung up and down from the movement of the train. The bushes on the side of the ditches shook as if swept by a hurricane, and the tall and gaudy yellow coxcombs that grew beside the fences bent to the ground in a seemingly overpowering desire to get loose from the earth and follow the rushing train. The dust from newly-ballasted portions of the track and the chips and leaves rose up fiercely against the force of gravitation, and whirled and gyrated like vapory clouds in a tempest. A thin line of smoke stretched interminably in the distance. The impetus of the train increased; the vehemence with which it rushed forward created a vacuum that apparently took nature some seconds to overcome, and the spirits of the passengers were exhilarated by the unprecedented speed at which they moved through space.

A side-track passenger train saluted us with cheers and locomotive whistles. Neither was heard; before the sound could reach the ears of the passengers in the special it was beyond hearing. One could see the rushing steam and the waving handkerchiefs. Train Dispatcher Noble reported that six miles between Highwood and Ridgeway were made in five minutes; the fifty-seven miles between St. Thomas and Charing Cross were made in fifty-six and a half minutes. A halt at Charing Cross of four minutes for water, and then on again with the same overpowering velocity. But go as fast as it might, the Canada Southern train could not overtake the sun; it sank, and nightfall came on. Then could be seen the work of the fireman. Each time he opened the furnace a volume of sparks shot out, and the trailing fire came down upon the track like the pyrotechnics of an aerial mine.

Finally, a sharp twist that sent the standing passengers over to the right, and directly another that sent them in the other direction, and the yard of Amherstburg Station was reached.

Hurrah! One hundred and eleven miles in one hundred and nine minutes! The fastest time in America—beating by three minutes the remarkable run of Vanderbilt's special train.—*Trenton Free Press*, Sept. 14.

Log Hauling by Steam.

We have alluded to the new project of hauling logs by rail from the skids to the banking ground on a road constructed for that purpose by Messrs. Hazleton & Gerrish, and promised our readers some additional information in regard to the subject as soon as it could be obtained from the practical operation of the road, but owing to the lateness of the completion of the road, and the fact that only a part of the stock was prepared, it will be impossible to give accurate figures of the ordinary expense of hauling logs by this means, and thus show the comparative value of the project as based on the expense of lumber operations where long hauling is done with sleighs; but we can give our readers a description of the road, the stock, etc., and leave the results for a future number, when expenses and accomplishments can be presented together, to enable each one to judge for himself concerning the adaptation of such a road to his own necessities.

Messrs. Hazleton & Gerrish owned a large tract of pine in Clare Co., Mich., in town 18 north, 5 west, and it was remote from any stream, and not accessible to any road westward, constructed or contemplated. They had a mill on the Muskegon River, and the nearest point to that stream from these lands is seven miles. The lands are located north of the Flint & Pere Marquette Railroad, the nearest point being seven miles: the distance from the river and the road rendering it impracticable to conduct lumber operations either by floating the logs to the mill on the Muskegon or by erecting a mill on the ground, if the logs or lumber were to be hauled on sleighs. Dame Necessity, the maternal parent of invention, suggested the experiment of a railroad, with a locomotive, as a substitute for horse power, and the project was finally attempted and speedily completed. The brief time between the conception of the project and its completion having a tendency to militate against the requisite amount of care in construction, align-

ments being less perfect than economy of operation demands, while many of the important points in railroad construction were omitted, to be perfected hereafter, so that to-day we can at best write of a project which is in an incomplete state, having, like a new railroad just opened for traffic, many imperfections; but these will hereafter be corrected, as we understand the experiment is already such a success as warrants the proprietors in congratulating themselves on its conception.

The iron used is the ordinary T rail, and weighs 25 pounds to the yard. The cars are constructed with an ordinary bunk frame, and weigh 1,700 pounds, and here we might add the suggestion of an experienced railroad man, who has been master mechanic of a road for a number of years, that this is the great mistake of the project. Light cars are desirable, but strength is indispensable, and can only be secured by weight; the saving of weight at the expense of needed strength is of course poor economy, and this, he believes, will be the result of these light cars. But what experience will demonstrate we cannot say, though we are of the opinion that the proprietors will hereafter construct heavier cars. The axle is the size of the ordinary street car, with wheels 20 inches in diameter. The locomotive is of the ordinary construction, though of lighter weight. They run 11 round trips every 24 hours, running night and day, and could, with proper facilities, run 15 round trips over a road of the same length—7 miles—and can haul 20 cars to a train, with 1,500 feet to the car, or a total for each train of 30,000 feet, or about 215,000 feet for 12 hours' hauling. The expense of fuel will be comparatively little, while the number of men employed will be much less than the force necessary to haul over an ordinary road. The number employed at the skids and on the bank is about the same as where teams are employed; but four trainmen will haul in 12 hours an average of 50,000 feet to the man, a distance of 7 miles, while not more than one-tenth that average could be made for each man and team, even with good roads. Such seems to be the result attained, and here we must leave the matter for further consideration, when the result of practical operations for the winter have been summed up; but to those who want to visit the road we will say, take the Flint & Pere Marquette cars from Saginaw to Farwell and from there a team to the lake, a distance of 13 miles, and whatever information you desire the proprietors will furnish.—*Northwestern Lumberman*.

General Railroad News.

ELECTIONS AND APPOINTMENTS.

Atlantic & North Carolina.—The board met in Newberne, N. C., last week, and re-elected Major John Hughes President; W. H. Oliver, Secretary and Treasurer; W. N. Dunn, General Freight and Ticket Agent; James B. Hanks, Master Mechanic; Wm. P. Metts, Roadmaster.

Boston & New York Air Line.—The name of the gentleman recently appointed Master Mechanic is Pulaski Leeds, and not Ladd, as it was incorrectly printed in our last issue.

Eastern.—Mr. Benjamin H. Patrick has been appointed General Passenger Agent. He has been for several years Assistant General Passenger Agent of the Chicago, Burlington & Quincy, and was formerly, for some years, General Passenger Agent of the Chicago & Northwestern. He has also been connected with the Pittsburgh, Fort Wayne & Chicago.

Jacksonville, Pensacola & Mobile.—Col. C. H. Allen, the lately appointed Receiver, has taken possession, and will act as General Manager of the road, with office at Tallahassee, Fla. He has appointed E. R. Hammett Treasurer and Auditor, and F. B. Papy General Freight and Ticket Agent.

Massachusetts Valley.—At the annual meeting in Stanstead, P. Q., recently, the following directors were chosen: W. K. Blodgett, Charles Brooks, G. C. Brown, S. Foster, R. N. Hall, F. A. Peters, Emmens Raymond, L. Robinson, T. L. Terrill. The board elected R. N. Hall President; Charles Brooks, Vice-President; S. Foster, Treasurer. The road is leased to the Connecticut & Passumpsic Rivers Company.

Montclair & Greenwood Lake.—Hon. Garret A. Hobart, of Paterson, N. J., has been appointed Receiver by the Chancellor of New Jersey. Mr. Hobart is also Receiver of the New Jersey Midland.

New York Elevated.—At a meeting of the board in New York, Sept. 20, Col. W. T. Pelton was chosen a director, in place of Mr. Peter Cooper, resigned. The board then elected Col. Pelton Vice-President, in place of Milton Courtwright, resigned. Mr. Courtwright still remains with the company as Chief Engineer. Col. Pelton is a nephew of Hon. Samuel J. Tilden.

Portsmouth & Dover.—At the annual meeting in Portsmouth, N. H., Sept. 24, the following directors were chosen: Frank Jones, Daniel Macy, John H. Broughton, A. R. Hatch, Oliver Wyatt, A. H. Young, C. H. Sawyer. The board elected Frank Jones, President; Wm. H. Hackett, Clerk; George H. Treadwell, Treasurer. The road is leased to the Eastern.

Sedalia, Warsaw & Memphis.—This company was recently organized at Sedalia, Mo., by the election of the following directors: George R. Smith, Wm. Gentry, John L. Hall, David H. Smith, Albert Parker, John R. Barrett, Cyrus Newkirk, Pettis County, Mo.; Richard H. Melton, James H. Lay, Samuel K. Crawford, Samuel Orr, Matthew D. Moore, Allen Crabtree, Benton County, Mo.

St. Louis & San Francisco.—Mr. James Baker has been chosen Vice-President, in place of W. D. Griswold, resigned. He is also Acting President, in place of Mr. Andrew Peirce, who has resigned, and whose office will remain vacant for the present.

Stratford & Huron.—The following officers have been re-elected for the ensuing year: President, S. S. Fuller, Stratford, Ont.; Secretary and Treasurer, W. P. Watson; Chief Engineer, A. B. Atwater.

PERSONAL.

—Mr. Wm. Hope Hull, a prominent lawyer of Augusta, Ga., and Attorney for the Georgia Railroad Company, died suddenly in New York, Sept. 13, while on a visit to that city.

—Hon. Lewis V. Boggs, United States Senator from Missouri, died at his residence in St. Louis, Sept. 20, at the age of 64 years. He was one of the original projectors of the St. Louis & Iron Mountain Railroad and was for several years President of the old company. He was also interested in the St. Louis, Kansas City & Northern Company, of which his son is a director. Mr. Boggs was formerly a wealthy man, but is said to have suffered very heavy losses within the past year.

—Mr. W. D. Griswold has resigned his office as Vice-President of the St. Louis & San Francisco Railway Company.

—Mr. Andrew Peirce has resigned his office as President of the St. Louis & San Francisco Railway Company, on account of continued ill health. It is announced that the office will remain vacant for the present.

—Mr. Charles D. Smith, Auditor of the Denver Pacific Railroad, died in Denver, Col., Sept. 14.

—Hon. Thomas Ryan has resigned his position as President and as a director of the Montreal, Portland & Boston Company. Mr. J. Cassie Hutton, of Montreal, has also resigned his position as a director.

—A number of the leading citizens of Jersey City recently

tendered to Mr. G. W. Barker, Superintendent of the New York Division of the Pennsylvania Railroad, a complimentary reception in recognition of his services to the community in preserving order and preventing a strike on his division during the recent troubles. Mr. Barker accepted, and the reception was to have been held at Taylor's Hotel, in Jersey City, Sept. 22, but was postponed until Sept. 27, in consequence of the death of Mr. Woolsey, the company's Superintendent of Ferries.

TRAFFIC AND EARNINGS.

Railroad Earnings.

Earnings for various periods are reported as follows:

Eight months ending Aug. 31:				
	1877.	1876.	Inc. or Dec.	P. c.
New Jersey Midland...	\$439,755	\$412,975	Inc. \$26,780	6.5
Net earnings.....	100,890	.....	.....	.....
Per cent. of exps....	77.05	.....	.....	.....
Month of August:				
Paducah & Elizabethtown.....	\$31,701	.....	.....	.....
Second week in September:				
Atchison, Topeka & Santa Fe.....	\$78,364	\$64,633	Inc. \$13,731	21.3
Denver & Rio Grande.....	17,862	.....	.....	.....
Missouri, Kansas & Texas.....	77,082	75,381	Inc. 1,701	2.3
St. Louis, Iron Mt. & Southern.....	94,000	100,220	Dec. 6,220	6.2
Week ending Sept. 7:				
Great Western, of Canada.....	\$76,560	\$80,246	Dec. \$3,686	4.6
Week ending Sept. 15:				
Grand Trunk.....	\$207,076	\$190,511	Inc. \$16,565	8.7

Grain Movement.

Receipts and shipments of grain of all kinds for the week ending Sept. 15 have been, in bushels:

	1877.	1876.	Increase.	P. c.
Lake ports' receipts.....	5,751,856	3,512,610	2,239,246	63.8
" " shipments.....	4,893,113	4,667,952	225,161	5.0
Atlantic ports' receipts.....	4,927,774	3,607,278	1,320,496	36.6

Of the lake ports' shipments, 21 per cent. went by rail this year, against 36 $\frac{1}{2}$ per cent. in 1876, 24 $\frac{1}{2}$ in 1875, and 8 $\frac{1}{2}$ in 1874.

Of the receipts at Atlantic ports, 54.6 per cent. arrived at New York, 13.4 at Montreal, 11.3 at Baltimore, 9.6 at Boston, 8.5 at Philadelphia, 2.0 at New Orleans, and 0.6 at Portland.

Chicago receipts and shipments for the week ending Sept. 22 were:

	1877.	1876.	Increase.	P. c.
Receipts.....	3,180,762	2,062,983	1,117,779	54.0
Shipments.....	2,659,126	1,849,242	809,884	43.7

Coal Movement.

Coal tonnages reported for the week ending Sept. 15 are as follows:

	1877.	1876.	Inc. or Dec.	P. c.
Anthracite.....	341,713	445,456	Dec. 103,743	29.3
Semi-bituminous.....	86,365	69,154	Inc. 17,211	24.9
Bituminous, Pennsylvania.....	36,912	42,009	Dec. 5,097	7.4

There has been little or no change in the situation in the anthracite region, though some of the private operators in the Wilkesbarre region have agreed to an increase in wages.

Latest advices are that the Lehigh & Wilkesbarre Company's miners, at a meeting held at Sugar Notch, Pa., Sept. 25, voted to accept an offer of an absolute advance of 10 per cent. in wages, and to resume work immediately.

Water Rates.

Water rates changed a little during the week ending Tuesday. There was an advance in rail rates to about 3 $\frac{1}{2}$ and 4 cents a bushel for corn and $\frac{1}{4}$ for wheat from Chicago or Milwaukee to Buffalo. Canal rates have been absolutely steady at 8 cents for wheat and 7 for corn from Buffalo to New York. Ocean rates are lower, Tuesday's quotations being 8 $\frac{1}{2}$ d. per bushel for grain from New York to Liverpool by steam; cotton, $\frac{1}{4}$ d. per pound; provisions, 35s. to 40s. per ton; cheese, 45s. to 50s. per ton; grain by sail to Cork for orders, 7s. to 7s. 3d. per quarter; petroleum, by sail, 4s. 6d. per barrel to Bremen, 6s. to Trieste, 5s. to Liverpool, 5s. 7 $\frac{1}{2}$ d. to Cork for orders.

THE SCRAP HEAP.

Railroad Manufactures.

The Baldwin Locomotive Works have recently delivered five locomotives to the Union Railway, Transfer & Stock Yard Company of Indianapolis. They have six wheels connected, with cylinders 16 by 24 in., and wheels 4 ft. in diameter. They have also just delivered four freight locomotives to the Atlanta & Charlotte Air Line Railway, and have a passenger locomotive in progress for the same line.

D. W. C. Carroll & Co., of Pittsburgh, have the contract for the new Pennsylvania round-house there. The roof is to be of iron, supported by iron trusses.

Wilson, Walker & Co., of Pittsburgh, recently made and shipped 40 tons of coupling links and 20 tons of pins in six days.

The Pittsburgh Locomotive & Car Works are running full time, employing 160 men. In addition to four locomotives for different roads they are making engines and boilers for the oil regions, shipping on an average one a day; they have also just taken an order for two 18-inch engines for a rolling mill.

A. Whitney & Sons, of Philadelphia, are now making some car wheels for England, Germany and South America.

L. Cook & Co., of Worcester, Mass., have designed a new style of wrench, which they call the "Mechanics' wrench."

The works of the Pittsburgh Forge & Iron Co., at Pittsburgh, are running double turn. The puddle-mill will shortly stop for ten days, to make some needed repairs. The product of the works so far this year is in excess of last year.

The Erie repair shops at Susquehanna, Pa., are building six consolidation engines for the road.

The Nashua (N. H.) Iron & Steel Co. has reduced the wages of all its employees 15 per cent.

Parties from Danville, Pa., have offered to establish a rolling mill at Pueblo, Col., provided the people of that place will subscribe \$40,000 in cash and real estate. They propose to build a blast furnace there also, to use Colorado coal and iron ore from Canon City.

The Kimball Manufacturing Co., at San Francisco, has just completed a number of horse cars for the California Street Railroad in that city.

The Trenton (N. J.) *State Gazette* says that the Trenton Iron Co. turned out from its rod mill in one day last week 40,000 pounds of No. 4 wire rods, which is claimed as the largest day's work ever done by a similar mill.

The East Indian Railway is about to let a contract for 50 locomotives, and it is rumored in Europe that the American locomotive works will offer to construct them.

The Central Iron Works, at Harrisburg, Pa., are well stocked with orders and are building another large plate and sheet mill.

The Westinghouse Air Brake Co., at Pittsburgh, is putting in its shop a 75-horse power engine built by Charles T. Porter, of Newark, N. J.

The Cumberland (Md.) *News* of Sept. 24 says: "Orders have been issued by the Baltimore & Ohio Railroad Company for the complete and final suspension of operations at their

iron works in this city Monday next, and there is no probability whatever that the works will ever resume as rolling mills. The closing of the mills relieves from duty Mr. Thomas Venners, who has so efficiently filled the position of superintendent of the works since the commencement of operations there, and the small force of regular employees under him."

Phillips, Nimick & Co. have a large display of manufactured iron at the Pittsburgh Exposition. Their boiler-heads flanged by machinery are said to be particularly good.

The Springfield (Ill.) Iron Co. turned out last week in 6½ days' running 651 tons of 30 lbs. iron rails for the Little River Valley & Arkansas, and the East Line & Red River roads. The best full day's work was 127 tons 540 lbs. The rails were all heated the first time in the Siemens furnace, given nine passes through the blooming rolls, then reheated in a single Siemens furnace and finished into rails in eleven passes more. The rails were rolled double length, 60 feet or over, and cut in two after finishing. This is claimed as an extraordinary week's work, considering the weight of the rails and that they were all reheated. The average number of rails per full day was 960. Only one train of rolls was employed. We believe that 60-foot rails have not before been rolled as a regular practice, unless it has been done at the Edgar Thomson Steel Works.

A Fire-woman.

The Burlington (Ia.) Gazette says: "Last Friday night Ben Horton, the engineer of No. 4 on the Chicago, Burlington & Quincy, was accompanied by his wife, who wagered him she could fire the engine over the division from the bridge-switch to Galesburg. Ben took her up, and bet her \$5 she couldn't. Mrs. Horton promptly accepted the challenge and buckled to work with the shovel and—won the bet. From the bridge-switch to Galesburg she shoveled one and a quarter tons of coal, and kept steam up like a little man."

Steam Street Cars.

The Brooklyn City Railroad Company has now in operation on its Third Avenue line, from Twenty-fifth street to Fort Hamilton, five steam cars, the machinery of which was constructed by the Baldwin Locomotive Works. The line from Twenty-fifth street to Fort Hamilton is something over four miles long, entirely in the country. The horse cars have heretofore taken 45 minutes for making the trip. The steam cars have made it in 19 minutes, and have made the round trip in 38 minutes. These cars are so designed, that, although the boiler and machinery are combined with the car, there is no liability whatever to communicating heat or smells from the boiler or machinery to the passenger compartment. They are also substantially noiseless in operation. The section of line referred to above will be worked hereafter entirely by steam.

An Iron-Framed Car.

The Boston Advertiser says: "Mr. Richards, Master Mechanic of the Boston & Providence Railroad, has built a platform freight car, the sills of which are four old 30-ft. rails. The car weighs 16,300 pounds and carries a load of coal of 34,630 pounds."

Long Wheel Mileage.

The Boston Advertiser says: "The eight cast-iron wheels under the tender of the locomotive M. B. Ives (Boston & Providence Railroad) have run 106,565 miles. These wheels were made at the Rhode Island Locomotive Company's Works, and are 33 inches in diameter."

A Brave Brakeman.

"I have often heard of the brave and daring deeds of engineers, firemen and brakemen," said a well-known cattle dealer, yesterday, in the hearing of a Bee reporter, "but I never witnessed a more daring feat than that performed by Pat O'Keefe, a brakeman on the Grand Island Division of the Union Pacific Railroad. It was on Durfee & Gasman's cattle train on Thursday afternoon. Conductor Jennings had charge of the train. We were running pretty fast for a freight train—about 22 miles an hour—equal to passenger train time. The cars jolted fearfully. When we were within about a mile and a half of Shelton Station the door of one of the cars flew off, having been kicked from its fastenings by one of the steers. O'Keefe saw the door fly off, and yelled out, 'For God's sake, stop the train.' but his voice was drowned by the rattle of the cars, and did not reach the engineer. The next thing I saw was a steer jump off the car. The animal landed on his feet, and skipped off at a lively gait, entirely unharmed, and went to grazing. That's a fact, as strange as it may seem. I expected to see the whole car-load follow him, but they didn't. For O'Keefe had by this time climbed down the side of the car, between the bars, and hanging with one hand, he took his hat in the other and waved it back and forth in the open door in the faces of the steers, and thus kept them at bay until we arrived at Shelton. I wouldn't have done what he did for the whole train of cattle, with the cars and engines thrown in. He saved twenty head of cattle which the company would have to pay for had they been lost. That brakeman deserves promotion."—Omaha (Neb.) Bee.

Damages for the Off Horse.

A horny-handed old farmer entered the offices of one of the big railroad companies Saturday and inquired for the man who settled for horses which were killed by the locomotives of a bloated corporation. They referred him to the company's counsel, whom, having found, he thus addressed: "Mister, I was driving home one evening last week—" "Been drinking?" "I sententionally questioned the lawyer. 'I'm Centrepole of the local Tent of Rechabites,' said the farmer. 'That doesn't answer my question,' replied the man of the law: 'I saw a man who was boiling drunk vote the prohibition ticket last year.' 'Hadden't tasted liquor since the big flood of 1846,' said the old man. 'Go ahead.' 'I will, squire. And when I came to the crossing of your soulless monopoly—it was pretty dark, and—zip! along came your train, no bells rung, no whistles tooted, contrary to the statutes in such cases made and provided, and agin the granger decisions, and—whoop! away went my off-hoss a-scootin' over the telegraph wires. When I had dug myself out'n a swamp some distance off and pacified the other critter, I found that that off-hoss was dead as Perry Smith; nothing valuable about him but his shoes, which might have brought say eight cents for old iron. Well—" "Well, you want pay for that 'ere off horse?" said the lawyer, with a scarcely repressed sneer. "I kinder should, you see," said the farmer frankly, "and I don't care about suing it, though possibly I'd get a verdict; for juries out in our town is mostly made up of farmers, and they kinder help each other as a matter of principle in these cases of stock killed by railroads." "And this 'ere off-hoss," said the counsel, mockingly, "was a Hambletonian colt, out of an Abdallah mare, with seventeen Messenger crosses, wasn't he? He was rising four years, as he had been for several seasons past, and had shown 2:25 on a half-mile track in the mud, hadn't he? And you had been offered \$16,500 for him the day he was killed, but wouldn't take it because you were going to win all the purses in the grand circuit with him, and then going to move to Nevada and buy a silver mine and senator-ship with the proceeds? Oh, I've heard of that horse before." "I guess there's a mistake somewhere, sonny," said the old farmer, with an air of surprise; "my hoss was got by the old man Butt's roan pacing hoss, Pride of Lemont, out'n a wall-eyed, no-account mare of my own, and now that he's dead I may say that he was twenty-nine next grass. Trot? Why Fred Erby's hoss that he was fined for furious driving of was old Dexter alongside of him! Sixteen thousand dollars?"

RAILROAD EARNINGS IN AUGUST.

Name of Road.	Mileage.					Earnings.					Earnings per Mile.	
	1877.	1876.	Inc.	Dec.	Per c.	1877.	1876.	Increase.	Decrease.	Per c.	1877.	1876.
Atchison, Topeka & Santa Fe.....	711	711	.....	.....	.....	\$255,174	\$231,549	\$23,625	.....	10.2	\$359	\$326
Burlington, Cedar Rapids & Northern..	368	368	.....	.....	.....	113,625	77,951	35,674	.....	45.7	309	212
Cairo & St. Louis.....	146	146	.....	.....	.....	17,176	26,082	.....	.....	8.9	118	179
Central Pacific.....	1,818	1,346	472	.....	35.1	1,385,000	1,696,153	.....	311,153	18.3	762	1,260
Chicago & Alton.....	679	650	29	.....	4.5	483,256	510,795	.....	27,539	5.4	712	786
Chicago, Milwaukee & St. Paul.....	1,402	1,400	2	.....	0.1	677,000	563,775	113,225	.....	20.1	483	403
Cleveland, Mt. Vernon & Delaware.....	167	167	.....	.....	.....	33,389	33,901	.....	.....	3.6	216	210
Denver & Rio Grande.....	298	298	.....	.....	.....	83,510	44,449	39,061	.....	88.0	289	216
Hannibal & St. Joseph.....	296	296	.....	.....	.....	184,210	171,380	12,830	.....	7.5	622	579
Illinois Central, Illinois lines.....	707	707	.....	.....	.....	908,976	489,674	419,302	.....	3.9	720	693
Indianapolis, Bloomington & Western..	344	344	.....	.....	.....	128,636	138,270	.....	9,639	7.0	374	402
International & Great Northern.....	516	459	57	.....	12.4	115,900	86,251	29,649	.....	34.4	249	188
Louisville & Nashville.....	967	921	46	.....	5.0	461,402	413,895	47,507	.....	11.5	477	449
Missouri, Kansas & Texas.....	766	766	.....	.....	.....	323,347	294,360	28,987	.....	9.8	411	375
Missouri Pacific.....	426	426	.....	.....	.....	351,396	306,575	44,721	.....	14.6	825	720
Mobile & Ohio.....	527	527	.....	.....	.....	125,714	118,986	6,728	.....	5.6	239	224
Nashville, Chattanooga & St. Louis.....	341	341	.....	.....	.....	154,997	131,103	23,894	.....	18.2	455	385
New Jersey Midland.....	86	86	.....	.....	.....	63,403	62,325	1,078	.....	1.7	737	725
Paducah & Memphis.....	115	115	.....	.....	.....	17,937	15,703	2,234	.....	14.2	156	137
St. Louis, Alton & Terre Haute—Belle-ville Line.....	71	71	.....	.....	.....	46,244	35,113	11,131	.....	31.7	651	495
St. Louis, Iron Mountain & Southern.....	685	685	.....	.....	.....	362,600	274,160	88,440	.....	32.2	529	400
St. Louis, Kansas City & Northern.....	530	530	.....	.....	.....	302,026	265,689	36,337	.....	18.1	570	482
St. Louis & San Francisco.....	328	328	.....	.....	.....	121,050	114,307	6,743	.....	5.9	369	348
St. Louis & Southeastern.....	356	356	.....	.....	.....	112,702	104,845	7,857	.....	7.5	317	295
Toledo, Peoria & Warsaw.....	237	237	.....	.....	.....	131,274	143,554	.....	.....	15.5	512	606
Wabash.....	628	628	.....	.....	.....	488,726	422,090	66,636	.....	15.8	778	672
Totals.....	13,525	12,827	698	.....	5.4	\$7,039,300	\$6,761,249	\$278,051	.....	4.1	\$520	\$527
Total increase.....	.....	.....	698	.....	.....	.....	.....	278,051	.....	.....	.....	.....

RAILROAD EARNINGS, EIGHT MONTHS ENDING AUGUST 31.

Name of Road.	Mileage.					Earnings.					Earnings per mile.				
	1877.	1876.	In.	Dec.	Per c.	1877.	1876.	Increase.	Decrease.	P.c.	1877.	1876.	In.	Dec.	P.c.
Atchison, Topeka & Santa Fe.....	711	691	20	.....	2.9	\$1,478,987	\$1,476,203	\$2,784	.....	0.2	\$2,080	\$2,136	.....	.....	56
Burlington, Cedar Rapids & Northern.....	368	368	.....	.....	.....	615,583	740,434	.....	\$124,851	16.9	1,668	2,007	.....	339	16.9
Cairo & St. Louis.....	146	146	.....	.....	.....	150,057	171,839	.....	15,782	9.2	1,009	1,177	.....	108	9.2
Central Pacific.....	1,759	1,317	442	.....	33.6	10,615,572	11,264,320	.....	648,748	5.8	6,035	8,533	.....	2,518	29.4
Chicago & Alton.....	679	650	29	.....	4.5	2,820,925	3,161,167	.....	340,242	10.8	4,155	4,863	.....	708	14.6
Chicago, Milwaukee & St. Paul.....	1,402	1,400	2	.....	0.1	4,192,460	5,309,562	.....	1,017,102	19.5	2,990	3,721	.....	731	19.5
Cleveland, Mt. Vernon & Delaw.	167	167	.....	.....	.....	242,558	244,391	.....	1,633	0.7	1,546	1,556	.....	10	0.7
Denver & Rio Grande.....	298	153	145	.....	.....	464,221	288,421	.....	175,800	61.0	1,652	1,896	.....	234	12.4
Grand Trunk.....	1,389	1,389	.....	.....	.....	5,862,429	6,226,101	.....	363,672	5.8	4,221	4,475	.....	254	5.8
Great Western, of Canada.....	496	496	.....	.....	.....	2,423,352	2,601,872	.....	178,520	6.9	4,886	5,240	.....	360	6.9
Hannibal & St. Joseph.....	296	296	.....	.....	.....	1,242,099	1,214,169	27,930	.....	2.3	4,196	4,102	94	.....	2.3
Illinois Central, Illinois lines.....	707	707	.....	.....	.....	3,058,095	3,550,335	.....	492,240	13.9	4,325	5,022	.....	697	13.9
Indianapolis, Bloom. & West'n.....	344	344	.....	.....	.....	792,758	996,313	.....	203,555	20.4	2,305	2,896	.....	591	20.4
International & Gt. Northern.....	516	459	57	.....	12.4	862,381	725,958	136,423	.....	18.8	1,671	1,582	89	.....	5.6
Louisville & Nashville.....	967	921	46	.....	4.7	3,409,578	3,175,898	233,679	.....	7.5	3,537	3,448	89	.....	2.6
Missouri, Kansas & Texas.....	766	766	.....	.....	.....	2,007,400	1,935,508	70,892	.....	3.7	2,554	2,404	90	.....	3.7
Missouri Pacific.....	426	426	.....	.....	.....	2,425,898	2,310,917	114,971	.....	5.0	5,695	5,425	270	.....	5.0
Mobile & Ohio.....	527	527	.....	.....	.....	1,049,498	1,065,534	.....	16,036	1.5	1,991	2,022	.....	31	1.5
Nashville, Chattanooga & St. Louis.....	341	341	.....	.....	.....	1,097,636	1,135,134	.....	37,498	3.3	3,219	3,329	.....	110	3.3
New Jersey Midland.....	86	86	.....	.....	.....	439,755	412,975	26,780	.....	6.5	5,113	4,802	311	.....	6.5
Paducah & Memphis.....	115	115	.....	.....	.....	119,829	134,798	.....	14,975	11.0	1,042	1,172	.....	130	11.0
St. Louis, Alton & Terre Haute, Belle-ville Line.....	71	71	.....	.....	.....	315,675	300,201	15,474	.....	5.1	4,446	4,228	218	.....	5.1
St. Louis, Iron Mt. & Southern.....	685	685	.....	.....	.....	2,672,061	2,451,133	220,928	.....	14.4	3,755	3,286	469	.....	14.4
St. Louis, Kansas City & North'n.....	530	529	1	.....	1.9	1,906,352	1,973,387	.....	67,035	3.4	3,597	3,773	.....	176	4.7
St. Louis & San Francisco.....	328	328	.....	.....	.....	830,045	814,264	15,782	.....	1.9	2,831	2,483	348	.....	1.9
St. Louis & Southeastern.....	356	356	.....	.....	.....	691,672	685,767	5,905	.....	0.7	1,942	1,920	22	.....	0.7
Toledo, Peoria & Warsaw.....	237	237	.....	.....	.....	694,137	929,605	.....	235,468	25.3	2,929	3,922	.....	993	25.3
Wabash.....	628	628	.....	.....	.....	2,748,256	2,780,180	.....	31,924	1.1	4,376	4,427	.....	51	1.1
Totals.....	15,331	14,603	728	.....	5.0	55,135,307	57,778,172	\$1,146,445	\$3,789,280	3.0	\$3,596	\$3,957	.....	\$331	9.1
Total increase or decrease.....	.....	.....	728	.....	.....	.....	.....	2,642,815	.....	4.6	.....	.....	.....	.....	.....

Bless your soul, do you think I'm a darn fool, or any one else is? It is true I was made an offer for him the last time I was in town, and for the man looked kinder simple, and you know now it is with horse-trading, I asked the fellow more n the animal might have been worth. I asked him sixty-five dollars, but I'd have taken forty dollars." "Forty dollars!" gasped the lawyer, "forty dollars!" "Yes," replied the farmer, meekly and apologetically; "it kinder looks a big sum, I know, for an old hoss, but that 'ere off hoss could pull a mighty big load, considering. Then I was kinder shook up, and the pole of my wagon was busted, and I had to get the harness fixed, and there's my loss of time, and all that counts. Say \$50, and it's about square." The lawyer whispered to himself: "Well, I'll be bulldozed!" and filled out a check for \$500. "Sir," said he, covering the old man's hand, "you are the first honest man I have ever met in the course of a legal experience of twenty-three years, whose dead horse was worth less than \$1,000, and couldn't trot better than 2:34 without training. Here also is a free pass for yourself and your male heirs in a direct line for three generations, and if you have a young boy to spare we will teach him telegraphing and find him steady and lucrative employment." The honest old farmer took the check and departed, smiting his brawny leg with his horny hand in triumph as he did so, with the remark: "I knew I'd fetch him on the honest tack! Last hoss I got killed I swore was a trotter, and all I got was \$165 and interest. 'Honesty is the best policy.'"—Burlington Hawkeye.

Pills in Payment of Fare.

The St. Louis Republican says: "Funny things happen on the Iron Mountain Railway as well as other lines. For instance a letter came lately to President Allen complaining of a certain passenger conductor. The complainant declared that he had offered the offending conductor a 25-cent box of—'a best antibilious pills in return for a passage to Carondelet, said passage being worth in coin ten cents. The complainant thought it very hard indeed, and altogether a fraud, when a genuine 25-cent box of antibilious pellets wouldn't balance a ten cent railway fare. He wanted to know what freedom was worth, and where was the American eagle when such things were allowed. The conductor was not discharged. No pills wanted by the Hot Springs route."

Safety of Railroad Travel.

According to the Registrar-General of England there were 1,246 persons killed in some way or other on railroads in that country during the year 1874, and 1,313 persons killed by horse conveyances, so that travel by rail is less dangerous than journeying by horse-power and apparently the locomotive is more tractable than its equine prototype.

OLD AND NEW ROADS.

Atlantic, Mississippi & Ohio.

Heraclitus's Railway Journal (London, England) of Sept. 15 says: "The counsel in America for the trustees of the consolidated mortgage loan expect to obtain in November a decree for the sale of this line. Mr. John Colburn sails by the Celtic, Sept. 20, for New York to meet Sir Henry Tyler, and they

have arranged to proceed together to Virginia to inspect the railroad, after which they hope to conclude arrangements for purchasing the property at the sale for the consolidated bondholders."

A New Costa Rica Railroad.

It is announced in Belgium that a new railroad is to be begun in two or three months to extend from San Jose de Guatemala to Escuinta, in Costa Rica, and that those who wish to sell supplies of rails or other materials for the road should address Juho Nanne, presumably at San Jose.

Atlantic & North Carolina.

Mr. A. Humphrey, late President of this company, has begun proceedings against Major Hughes, the new President, and has caused a writ of *quo warranto* to be served upon him, claiming that his election was not legal, and that the receivership having been

Little Four Mile Creek, near Des Moines, Ia., Aug. 29, has found a verdict as follows:

1st. We find that culvert No. 323 was of sufficient capacity to pass the water of what have heretofore been known as our "greatest storms" or rainfalls.

2d. We find that the material used in the construction of culvert No. 323, on the Chicago, Rock Island & Pacific Railroad, was good; the workmanship was a fair job of second-class masonry.

3d. We are of the opinion that it was an engineering mistake that wing-walls were not provided for said culvert No. 323, although it is the opinion of the jury the existence of wing-walls would not have prevented the destruction of said culvert in this particular case, owing to the sudden and unprecedented flood-rise on the night of Aug. 28 and the morning of Aug. 29, 1877.

4th. We believe, from the evidence taken, the rainfall which occurred in the vicinity and along the east branch of Little Four Mile on the night of August 28 and morning of August 29, to have been the greatest ever known in this section of the state, and was the primal and responsible cause of the accident.

5th. From the testimony of witnesses residing at Altoona and near the scene of the late wreck, and the testimony of engineers and conductors who had passed over culvert No. 323 on the night of the accident and only a short time previous, together with the testimony of the conductor and fireman of the fated train, we, the jury, do not believe that engineer William Rakestraw, who lost his life by the accident, could have realized the character and terrible severity of the storm in the vicinity of the said culvert.

6th. We, the jury, believe from recent data of rainfalls during the past year, and in view of the late accident, that civil engineers should provide much larger areas for artificial waterways than have been their practice heretofore.

The evidence given before the jury was very voluminous. A number of engineers and masons were examined as to the design and construction of the culvert which was washed out, and a great deal of testimony was taken as to previous freshets in the creek, average rainfall and similar matters. Much care seems to have been taken to secure an intelligent verdict.

Chicago & Northwestern.

The following order has been issued by Superintendent Oliver, of the Iowa Division:

"Agents, telegraph operators and watchmen: When there is a severe storm, or high wind, or sudden rise of streams, either in the day or night time, in the vicinity of your stations, you will report at once to train and road-masters in charge of the division, and also see that section-foremen are at hand with their men, to examine and protect their track, calling at their houses and waking them up, if necessary.

"Section-foremen will, in all such cases, get out their men immediately and proceed over their sections, carefully examining all bridges, culverts and openings, and track exposed to damage by high water, and if any place is found unsafe or liable to become so, will leave a man, or more than one, if necessary, to flag approaching trains, and will report condition of their track to train and roadmasters, from the nearest telegraph station.

"Agents, watchmen and section-foremen at such places where there are no telegraph offices will be particularly careful to strictly obey this order, sending report of any actual or threatened damage to first telegraph station by section men.

"Train-men (conductors and engineers) overtaken between stations by such storms, or indications of damage from high water, will proceed with utmost caution and with trains under such complete control, and at such a low rate of speed that they can readily stop after coming in sight of any obstruction or washout, in time to prevent accident. Stop and examine all bridges and culverts and other places liable to be injured by water in streams, or heavy rainfalls, until you arrive at a telegraph station, where you will call up agent or operator, make a report and receive instructions before proceeding.

"Train dispatcher, on receiving reports of such storms, etc., will at once hold all trains until the track is known to be safe.

"Section-foremen will not wait to be called or instructed to perform the duty required in this order—the object in addressing the same to both agents and foremen being to make the performance of the duty doubly sure.

"Road-masters will explain to, and call attention of section-foremen to the absolute necessity of strict obedience to this order; no excuse will be taken for its neglect.

"Agents, operators and watchmen will be very careful to examine main and side tracks, switches, and cars at their stations during such storms and high winds, both in the day and night time, and will remain on duty until relieved.

"All employees of track and transportation departments will give special attention to these orders. Take no risks! Remember it is better to take these precautions a thousand times unnecessarily than to neglect them once and subject one train to accident."

Chicago & Southwestern.

In our number for Aug. 24 appeared a statement that a foreclosure suit under the Atchison Branch mortgage had been begun by "Baron T. C. A. Van Weel, who represents about \$700,000 of the \$1,000,000 bonds issued under the mortgage." Mr. T. C. A. M. Van Weel writes us that the statement is correct as to the foreclosure suit, but he desires to disclaim the title of Baron, to which he makes no claim. The title was added to his name on the authority of an exchange. Mr. Van Weel further states that his declaration in the foreclosure suit based his right on the ownership of one \$1,000 bond, and adds: "It is of importance * * to all holders of railroad mortgage bonds to be aware of the fact that this foreclosure is brought on but one of the one thousand bonds of \$1,000 each."

The suit is in the Buchanan County (Mo.) Circuit Court, and, as noted in the item above referred to, the road has been put by the Court in the hands of a receiver.

Dividends.

Dividends have been declared as follows:

United New Jersey, 2½ per cent., quarterly, payable Oct. 10.
Chicago, Rock Island & Pacific, 2 per cent., quarterly, payable Nov. 1.

Ogdensburg & Lake Champlain, 4 per cent., semi-annual, on the preferred stock, payable Oct. 1.

Chicago, Milwaukee & St. Paul, 3½ per cent. on the preferred stock, payable Oct. 16.

Erie.

The Receiver's account for July is as follows:

Balance on hand July 1.....	\$376,505 57
Receipts, freight account.....	951,333 40
" passenger account.....	321,145 27
" mail account.....	50,010 64
" other accounts.....	522,910 85

Total.....\$2,221,905 73
Disbursements.....1,468,427 71

Balance, Aug. 1.....\$753,478 02

The receipts exceeded the disbursements for the month by \$376,972.45. The amount of Receiver's certificates was decreased by \$69,407.61 during the month, leaving certificates to the amount of \$1,931,106.17 outstanding Aug. 1.

Danville, Hazleton & Wilkesbarre.

The bondholders of this company have decided that it is desirable to foreclose the mortgage and have requested the

trustees to take the necessary action to secure a decree of foreclosure and sale. The interest on the bonds has been in default since April 1, 1875. The road is 43½ miles long, from Sunbury, Pa., to Tomhicken, and had, by the last report \$1,400,000 first and \$1,447,000 second-mortgage bonds. It is worked by the Pennsylvania Railroad Company, under a lease made in 1872.

Foreclosure Sales.

The sale of the New Jersey Southern road is now fixed for Oct. 9, at Long Branch, N. J.

The Worcester & Somerset road is to be sold at public sale at Princess Anne, Md., Oct. 2. The road is nine miles long, from Newtown, Md., to the Eastern Shore road at Newtown Junction; by the latest report it had a bonded debt of \$50,000.

Galveston, Houston & Henderson.

This road received considerable damage from the violent storm of Sept. 17 at Galveston. The long pile bridge over the bay was broken in several places, one gap being nearly a quarter of a mile long. The track east of the bridge was under water for some distance and badly washed, while west of the bridge it was washed in several places. The damage to the bridge was confined mainly to the loss of ties and stringers, most of the piles remaining. The draw was forced a little out of line, but escaped serious damage.

Grand Trunk.

At a recent meeting in Toledo, O., a committee of five was appointed to confer with the officers of the Grand Trunk Railway on the subject of a branch or extension of that road to Toledo. In answer to a telegram, Sir Henry W. Tyler, President of the company, expressed his willingness to come himself, if possible, or to send a representative to meet the committee.

Hannibal & St. Joseph.

Gen. Singleton has for some time been pressing a claim against this company for legal services, the justice of which the officers of the company refuse to admit. On Sept. 22 he made a sudden attempt to enforce its payment by attaching all the passenger coaches and an engine at Quincy, Ill., and at the same time garnished all funds due the company in the hands of the Chicago, Burlington & Quincy. A train was made up of borrowed cars and a borrowed engine and sent out on the usual time.

The report is renewed that at the annual meeting in November the road will pass under the control of Jay Gould, and that Sidney Dillon will be President. A full board is to be elected this year.

Harrisburg & Potomac.

The plan of completing and extending this road as a parallel and competing line to the Cumberland Valley has been revived, and articles of incorporation have been filed for a company to build a bridge over the Susquehanna, a short distance below Harrisburg, Pa., for the use of the road.

Kent County.

This road was sold Feb. 15 last under a decree of foreclosure granted by the Maryland Circuit Court and was bought in by the trustees, acting, it is said, under instructions from Jay Gould, one of the principal bondholders. Some of the bondholders have recently applied to have the sale set aside and a new sale ordered, on the ground that they were not allowed a proper opportunity to bid at the sale, or to protect their interests. The Court has appointed a commission to take testimony.

Houston & Texas Central.

It is announced that the coupons due Oct. 1 on the consolidated bonds will be paid by John J. Cisco & Son, No. 59 Wall street, New York. It will be remembered that the July coupons on the first-mortgage bonds were not paid by the company, but purchased by Messrs. Cisco for account of Mr. Charles Morgan.

Lake George & Muskegon River.

This road, now seven miles long, is in Clare County, Mich. It is a private road, used for transporting pine logs to the Muskegon River, and is owned by Gerrish & Hazelton, who are now building an extension 2½ miles long, to reach a large tract of pine hitherto inaccessible. The road has carried about 29,000,000 feet of logs this season, and its owners have contracts for handling 50,000,000 feet the coming season.

Louisville & Nashville.

In order to accommodate the furnaces on and near its line in Alabama and Tennessee, this company has agreed to carry pig iron to Louisville and store it in its yards there. The company will not collect the freight charges until the iron is sold and removed from the yard, but will add a charge of five cents per ton per month for storage. Under this arrangement the furnace-men can have their iron at a point convenient to market and ready for shipment at any time, while the company can move the iron to Louisville at its own convenience, when other freight business is slack, or when there is a surplus of empty cars to be moved northward.

Maple River.

This road was formally opened for business Sept. 17 to Ida, in Ida County, Iowa, 35 miles west by north from the junction with the Chicago & Northwestern, which is three miles west of Carroll. The line of the road is from the junction northwest 20 miles to Wall Lake, and thence a very little north of west to Ida. The company is organized in the interest of the Iowa Railroad Land Company, and the road is built for the purpose of opening to market a large tract of that company's land.

Marietta & Cincinnati.

A call has been issued, signed by several of the largest bondholders, for a meeting to be held at the Rialto Building, Baltimore, Oct. 1, at noon, for the purpose of appointing a committee to devise means of protecting the bondholders' interest in the property. Holders of all the issues are invited to attend. The bonds are largely held in Baltimore.

Meetings.

Meetings are announced as follows:

New Orleans, Jackson & Northern, at the office in New Orleans, Oct. 5.

Knoxville & Ohio, annual meeting, in Knoxville, Tenn., Oct. 9.

Hannibal & St. Joseph, annual meeting, in Hannibal, Mo., Nov. 4.

Milwaukee, Lake Shore & Western.

This company is now offering for sale at 85 and interest \$217,000 of its first-mortgage bonds, the proceeds to be used for the purchase of new equipment and for improvements of the property. The road extends from Milwaukee to Appleton, 141 miles, with a branch to Two Rivers, seven miles long. The road was sold under foreclosure in 1875 and bought by the bondholders, who authorized a new issue of \$750,000 bonds secured by a first mortgage on the 127 miles of road then completed. Of these new bonds \$533,000 have been issued and the balance is now offered.

Missouri River, Fort Scott & Gulf.

The Secretary of the Interior has declined to receive a conveyance of certain lands granted to this company, on the grounds that the act of March 3, 1877, authorizing the conveyance evidently intended that it should be made free of incumbrance, whereas the lands were still covered by a mortgage executed by the company in 1869. The Secretary declines, therefore, to certify that the company has complied with the

law of 1877 until the lands in question are fully released from the mortgage.

The object of the attempted transfer of the lands to the Government was, it is said, to enable the company to escape from the free transportation of mails, troops and Government freight over the road, which was one of the conditions of the land grant.

Mississippi & Tennessee.

Holders of the first-mortgage, funded-interest and second-mortgage bonds of this company are requested to deposit them after Oct. 1 with the Central Trust Company of New York, for exchange for the new 8 per cent. bonds of the company, in accordance with the circular of last August.

Montclair & Greenwood Lake.

The steamboats owned by this company and used to run between the terminus of the road on Greenwood Lake and the head of the lake were seized last week by the Sheriff of Orange County, N. Y., under a judgment for \$2,500 obtained by the United States Rolling Stock Company. Three of the engines on the road were also seized at West End, N. J., on suit of the Rogers Locomotive Works, of Paterson.

Subsequently an application was made to the Chancellor of New Jersey by the United States Rolling Stock Company, one of the principal creditors, and the Chancellor appointed Mr. G. A. Hobart Receiver. Mr. Hobart is a lawyer of Paterson, a State Senator, and is also one of the Receivers of the New Jersey Midland.

The road has been built for several years, and was sold some two years ago under foreclosure of the first and second mortgages. It has not earned its running and terminal expenses heretofore, though reported to be doing better this year. The floating debt is said to be about \$40,000 and it is thought that the stock and bondholders will raise this amount.

Monterey & Salinas Valley.

The round-house at Monterey, Cal., was burned on the night of Sept. 2, having caught fire in some unknown manner. A passenger car was destroyed and both of the two locomotives belonging to the road were badly damaged. Traffic over the road is suspended until one of the engines can be repaired or a new one procured.

Nashville, Chattanooga & St. Louis.

This company will receive until Oct. 4, at the office of R. C. Morris, Resident Engineer, in Nashville, Tenn., proposals for the grading, masonry, bridge superstructure, trestle-work, ties and tracklaying of the section of the Southwestern Railroad extending from McMinnville to Sparta, Tenn., 26½ miles. About half the grading, masonry and trestle-work was completed in 1872.

The bridge superstructure consists of seven spans, one of 100 feet, three of 125 feet, one of 150 feet and two of 210 feet. Bids will be received for each span of triangular combination truss, and also for all wrought iron for the two 210 feet spans.

Bids will be received for the whole section, for a single mile, or for any portion of the work. Payments will be made monthly, reserving 20 per cent. until the completion of the work. Profiles and plans of the bridges can be seen at the office in Nashville.

New Brunswick & Canada.

The gauge of the 121 miles of this road was changed Sept. 18 from 5 ft. 6 in. to 4 ft. 8½ in., without mishap and with but little interruption to traffic.

New Jersey Midland.

The earnings of this road for August and the eight months ending Aug. 31 were as follows:

	August.	Eight months.
Passengers.....	\$18,275 38	\$93,303 06
Freight and milk.....	42,067 87	294,684 18
Miscellaneous.....	3,059 63	51,767 74

Total.....	\$63,402 88	\$439,754 98
Working and terminal expenses.....	49,583 05	338,864 58

Net earnings.....	\$13,819 83	\$100,890 40
Per cent. of expenses.....	78.21	77.05

As compared with 1876, the month of August shows an increase in gross receipts of \$1,078.35, or 1.7 per cent.; the eight months an increase of \$26,780.04, or 6.5 per cent. The Receiver's account is as follows for the month:

Balance, Aug. 1.....	\$1,818 27
Gross receipts, as above.....	63,402 88
Loan account.....	9,606 25

Total.....\$74,827 40

Working and terminal expenses, as above.....\$49,583 05

Lease account, Middletown, Unionville & Water

Gap R. R.....3,000 00

Construction account.....2,162 37

Equipment account.....2,413 19

Right of way claims.....1,450 00

Loan account.....15,150 00

Total.....73,778 51

Balance, Sept. 1.....\$1,048 80

Deducting rental paid the surplus receipts for the month were \$10,819.83.

New York Elevated.

At a meeting of the board held Sept. 20 it was resolved to ask for proposals for building a second track on the present line and for an extension from Sixty-first to Eighty-first street; also for constructing a new double track road on the east side of the city, chiefly in Pearl street and Third avenue from Whitehall street to Sixty-first street, and the various lines connecting it with depots and ferries.

The company gives notice that it will receive bids until noon of Oct. 2 for the following materials to be used in the above extensions: Blue or granite flag stones, bids to give price per stone; bricks, per thousand; cement, per barrel; planed yellow pine, juniper and white oak ties and guards, per 1,000 feet; cast iron bed plates and washers, per pound; cast-iron caps for columns, per pound; wrought-iron columns and girders erected and in place complete, bids to give price per pound. Terms will be cash. Proposals for the bridge superstructure will state how soon the material will be ready to begin erection, and how many spans can be supplied and erected each day thereafter. The foundations and bed-plates will be put in place by the company. Plans and specifications can be seen at the office, No. 7 Broadway, New York.

Proposals are also asked for Bessemer steel rails, 50 lbs. per yard, bids to give the price per ton delivered.

Ohio & Mississippi.

Receiver King reports for August as follows:

Cash balance Aug. 1.....	\$30,406 10
Receipts for the month.....	429,652 37

Total.....\$460,058 47

Disbursements for the month.....359,104 62

Balance Sept. 1.....\$100,953 85

The receipts exceeded the disbursements by \$70,547.75 for the month.

Omaha & Republican Valley.

This road is now completed to David City, in Butler County, Nebraska, 42 miles westward from the late terminus at Wahoo, and 61 miles from the junction with the Union Pacific at Valley Station. Trains are now running regularly. The road has

been built chiefly with subsidies voted along the line, and is worked as a branch of the Union Pacific.

Pennsylvania.

It is reported that arrangements have been completed for the extension of the Bedford & Bridgeport road, which is leased by this company, from its present terminus at the Maryland State line to Cumberland, Md., a distance of six miles. The estimated cost is \$150,000, of which citizens of Cumberland promise to subscribe one half, the other half to be raised by an issue of bonds. The road, it is said, will be built by a new company, to be known as the Bedford & Bridgeport Extension, and leased when completed to the Pennsylvania. At present the Cumberland connection is made over the track of the Cumberland & Pennsylvania road.

Peterboro & Hillsboro.

It is said that the \$50,000 needed to secure the completion of this road has been raised. The grading of the northern end of the road, from Hillsboro, N. H., to Bennington, is nearly completed, and work has been begun on the southern end, near Peterboro. It is expected that the grading can be completed this fall ready to lay track early in the spring.

Pittsburgh, Titusville & Buffalo.

This company reports net earnings for August as follows: 1877, \$38,235.37; 1876, \$27,676.79; increase, \$10,558.58, or 38.1 per cent. The net earnings this year are nearly \$15,000 in excess of the interest charges for the month.

Portland & Ogdensburg.

A dispatch from Portland, Me., Sept. 21, says: "Judge Laby has refused to grant the motion of the Trustees of the first-mortgage bonds of the Portland & Ogdensburg Railroad for the appointment of a receiver, but he has ordered the adoption of a system of accounts and payments which will equally well protect their interests. Meanwhile, the directors, finding the receipts sufficiently large, have proposed that the four over-due coupons be funded in interest-bearing scrip, payable in 12 equal semi-annual payments, beginning on the 1st of October, prox., the Trustees to withdraw the pending proceedings, and commence foreclosure proceedings, which shall also be discontinued in July, 1879, if the payments are regularly met. The bondholders here approve this proposition, and doubtless it will be accepted."

Pullman Palace Car Company.

Some figures which have been published from the report for the year ending July 31 are as follows:

	1876-77.	1875-76.	Inc. or Dec.	P. c.
Gross earnings.....	\$2,570,639	\$2,555,011	Inc. \$15,628	0.6
Expenses.....	1,949,709	2,031,868	Dec. 82,149	4.0
Net earnings.....	\$620,930	\$523,153	Inc. \$97,777	18.7
Per cent. of expenses.....	75.83	79.52	Dec. 3.69	4.6

The statement of expenses must include rentals and interest on bonds.

The bonded debt has been decreased by \$56,000, and the usual dividends of 8 per cent. paid on the stock.

A dispatch from Louisville, Ky., Sept. 22, says: "In the suit of E. H. Paine et al. vs. The Pullman Southern Company, arising out of the consolidation of Southern sleeping-car companies in 1872, Chancellor Bruce yesterday decided the law in favor of the Pullman Company, but upon a technicality in favor of presenting accounts for repairing cars. He ordered the release of attached dividends and stock held as collateral by the Pullman Company. A petition has been made for a rehearing upon the question of accounts. The case will no doubt go to the Court of Appeals."

Rochester & State Line.

The track is now down and ready for use as far as Gainesville Creek, N. Y., six miles beyond the last point noted, and 53 miles from Rochester. On the southern end of the road tracklaying has been resumed from Ellicottville towards Salamanca.

Salisbury.

This company has resolved to make an issue of \$100,000 first-mortgage bonds for the purpose of completing the road. The company has about three miles of completed road from Meyersdale, Pa., to some mines, and about 5½ miles more partly completed. The present company is a reorganization of the Salisbury & Baltimore.

Sedalia, Warsaw & Memphis.

A company by this name has been organized to build a narrow-gauge railroad from Sedalia, Mo., south by west to Warsaw in Benton County. The distance is about 40 miles and for 18 miles of this there is an old graded road which can be used. This section was graded with the proceeds of bonds issued by Benton County in aid of the Osage Valley & Southern Kansas road, and now belongs to the county. The capital stock of the new company is to be \$250,000.

Spartanburg & Augusta.

A convention was held in Edgefield Court House, S. C., Sept. 17, at which many delegates were present and a number of speeches were made. After some discussion over the route, resolutions were adopted favoring a line from Spartanburg, S. C., to Augusta, Ga., by way of Laurens, Ninety-six and Edgefield Court House. The convention adjourned to meet in Laurens, Oct. 1.

St. Croix & Penobscot.

The board of directors has ordered a survey to be made at once of the proposed extension from Princeton, Me., north by west to Passadumkeag on the European & North American. The distance is about 25 miles.

St. Louis, Iron Mountain & Southern.

Messrs. S. G. & G. C. Ward, attorneys for Baring Brothers & Co., have issued a statement to the bond and stockholders explaining and defending their position and setting forth their plans with regard to this company.

The holdings owned or represented by the Barings are stated to be \$3,169,000 Cairo & Fulton first-mortgage bonds, \$2,087,000 St. Louis & Iron Mountain second mortgage, and \$1,795,000 consolidated-mortgage bonds, amounting to \$7,051,000. The transfer of 25,000 shares of Allen's and Marquand's stock in trust to the Barings is explained as follows: When the proposal to fund coupons was made in February, 1875, some large bondholders objected that the full and unrestricted control of the company would be left with the President and Vice-President, by reason of their holding a clear majority of the shares. To satisfy these bondholders Allen and Marquand made the transfer of 12,500 shares each to the Barings, with authority to vote on them until interest payments should be resumed, by a contract which is printed in full in the circular, and in which the following explanatory passage occurs: "The condition of the aforesaid agreements, and the purpose of the things done in consideration therewith, and the true intent and meaning of these presents being hereby declared to be, to confer upon said Baring Brothers & Co. the absolute and irrevocable power of voting upon and controlling the above amount of shares belonging to said Allen and Marquand, for the term above named."

The circular further notes the failure to resume interest payments as agreed, and the delay in clearing of the floating debt. The total debt, funded and floating, it states to have been \$24,897,000 at the time of the consolidation in May, 1874, while by President Allen's recent report it was \$30,185,000 on the first July last.

Of the twelve directors, one is a son of the President, and three, including that son, are officers of the company, appointed by and holding office at the pleasure of the President. Two others are citizens of St. Louis, one holding a single share and the other 59 shares of the company's stock. The other five are citizens of New York.

The attempt to vote on the trust stock last February is related, and it is charged that 45,000 shares of new stock were issued illegally, ostensibly as collateral, but really to add to the voting power of Allen and Marquand.

With regard to the charge that the company would have resumed interest payments in full last November, but that Mr. S. G. Ward, the agent of the Barings and one of the directors, advised against it, the following statement is made:

"The truth upon that subject is, that Messrs. Allen and Marquand did express a desire to resume full payment of interest on Nov. 1, 1876, laying great stress upon the advantage to the company's credit by such a proceeding; but in order to do so they proposed that Messrs. Baring should withhold their coupon from presentation, and that they would do the like with their own; paying all others in full. To this proposal Mr. Ward, on behalf of the Barings, refused to assent. At this time he had sufficiently examined into the company's affairs to become satisfied that it was in no condition to resume full payment of interest, and that if such resumption were attempted, it must shortly be followed by another default. Convinced, as he was, that any project of full resumption, at that time, must be based upon either self-deception or a design to deceive others by creating a false impression as to the company's earnings and position, and establishing temporarily a market upon which to put off bonds or stock, or both, at prices unwarranted by realities, he did pronounce decisively against any such project, and advised that half payment of interest upon the bonds, other than Iron Mountain first mortgage, was as much as the company could at that time safely undertake, and that it should be accompanied by a frank statement to bondholders of the true position of affairs."

To support the soundness of this position, the circular quotes the action of the company since that time; not only did it not resume in full, but it failed to pay any part of the second coupons falling due after the expiration of the funding agreement, and now it asks the bondholders to forego further payments amounting to about \$700,000 before it proposes to resume full payment.

The circular charges that the recent sale of \$1,113,000 consolidated bonds, made after foreclosure proceedings had been begun under the consolidated mortgage, was made to give Allen and Marquand a counteracting interest in these bonds, about four-fifths of which were controlled by the Barings, when the suit was begun. Mr. Allen's circular of Aug. 15 stated that these bonds were sold "flat" at 40 to pay pressing floating debts. The Wards state that not only were the bonds sold "flat," that is with the coupon next to mature, on which interest was not due for some time after the sale, but also that four past-due coupons, which should be cut off from newly issued bonds, were included, so that really the price was at the rate \$40 for \$114 of bonds and coupons. Moreover, they say that the sale was substantially a transfer of the bonds to Allen and Marquand, who were indorsers of the floating debt retired by these bonds. The creditors placed little value on their claims against the company, but depended chiefly upon the guaranty of Allen and Marquand, and so could easily be induced to accept Allen and Marquand's paper instead of the company's paper indorsed by them. The Barings will contend in court that this sale was invalid, being substantially by the officers to themselves for an insufficient consideration. They will not consent to the plan proposed lately by the company, but will insist upon a foreclosure, and if there is any trouble in effecting it in the suit now pending, they will bring suit under one of the other mortgages.

Their circular also presents a slight sketch of reorganization after foreclosure, the main points being the limitation of the funded debt to the principal of the bonds prior to the consolidation bonds (\$21,877,000), and the funding of unpaid coupons and consolidated bonds into two classes of income bonds.

As to the charge that they are hostile to St. Louis interests and have interests which will lead them to favor the Louisville & Nashville as against the Iron Mountain road, they deny it. They acknowledge the importance of St. Louis to the road, and say that their choice for a receiver, when they applied for one last spring, was a St. Louis man.

Stratford & Huron.

At the annual meeting in Stratford, Ont., recently, the board reported that the grading was nearly all done from Stratford north to Listowel and that eight miles of track had been laid and ballasted from Stratford. Some aid had been offered for an extension north of Listowel, but all consideration of such extension has been postponed until the road is completed to that place.

The Grand Trunk and the Great Western.

A dispatch from Sarnia, Ont., Sept. 25, says: "The presidents of the Grand Trunk and the Great Western railways have issued instructions to their executive officers to maintain equal and agreed rates, fares and facilities, and have concurred in the appointment of joint committee of the two boards for a better enforcement of these instructions."

Tyler Tap.

This road is now completed from the crossing of the Texas & Pacific at Big Sandy south by west to Tyler, Texas, about 20 miles. The opening of the road was celebrated by a barbecue at Tyler, Sept. 18, at which many excursionists were present. Work is in progress on another section of 20 miles, from Big Sandy to Gilmer.

Union Pacific.

The County Commissioners of Douglas County, Neb., have decided to refuse the petition presented by some tax-payers of Omaha, requesting that the suit of the county against this company be discontinued, and have resolved to prosecute the suit.

The men concerned in the robbery of a passenger train last week at Big Springs, Neb., have not been caught, though traces of them have been found and several parties are in pursuit.

Union Railway, Transfer & Stock Yards.

This company's road, better known as the Indianapolis Belt road, is rapidly approaching completion. The grading and buildings at the stock yards are well advanced and connections with all the lines on the north of the city are being put in. The bridge over White River was completed and tested last week. This is an iron truss bridge, 420 feet long, in three spans, and was built by the Louisville Bridge & Iron Company; with its approaches it constituted the heaviest work on the road. Track is being laid at several points and the company has received five engines.

Utah Western.

This road is now completed and trains are running to the tunnel near Stockton, Utah, which is nine miles south by west from the late terminus at Tooele, and 40 miles from Salt Lake City. The town of Stockton cannot be reached until the tunnel is completed.

Washington City, Virginia Midland & Great Southern.

This road has been suffering from the incursions of tramps. On Sept. 18 a gang numbering about 20 made a descent upon the depot at Warrenton Junction, Va., and robbed the building of everything portable it contained, amounting in value to

about \$400. They next attempted to board the pay train near Manassas, but were kept at bay until the engine could be reversed and the train run back to Manassas. There a number of citizens and railroad employees organized a posse and succeeded in capturing six of the gang, who are now in jail at Brentsville. On the next day a gang attempted to capture a freight train, but were driven off by the trainmen and one of them captured and consigned to Alexandria jail.

ANNUAL REPORTS.

Burlington, Cedar Rapids & Northern.

This company owned at the close of its fiscal year, June 30, 1877, the following lines:

	Miles.
Main Line, Burlington, Ia., to Plymouth.....	218.5
Milwaukee Division, Linn, Ia., to Postville.....	94.1
Pacific Division, Vinton, Ia., to Tracer.....	24.5
Muscatine Division, Muscatine, Ia., to Riverside.....	30.9

Total..... 368.0
Since the close of the year the Pacific Division has been extended from Tracer to Grundy Centre, 20.5 miles, and the Main Line from Plymouth to Albert Lea, Minn., 33.5 miles, this extension, however, making only 23.5 miles new track, as 10 miles of the Central Railroad of Iowa are used as part of the extension.

The equipment consists of 33 locomotives; 14 passenger, 1 sleeping, 4 combination, 4 baggage, mail and express and 11 way cars; 525 box, 26 stock and 303 coal and flat cars; 73 hand, 73 rubble cars and 3 iron trucks.

The present company was organized June 22, 1876, by the bondholders, who bought at foreclosure sale the property of the old Burlington, Cedar Rapids & Minnesota Company. The President reports that the reorganization has been accepted by holders of \$5,038,000 out of \$5,400,000 Main Line bonds; \$2,067,000 out of \$2,200,000 Milwaukee Division bonds; \$1,683,000 out of \$1,800,000 Pacific Division bonds, and \$659,000 out of \$800,000 Muscatine Division bonds. The reorganization provides for the issue of \$10,000,000 capital stock and \$6,500,000 first-mortgage 5 per cent. bonds. At the close of the year the capital account stood as follows:

Stock (\$10.00 per mile).....	\$5,208,000 00
Bonds (\$15.50 per mile).....	5,712,350 00
Bills and accounts payable.....	234,640 79

Total (\$30,314 per mile).....\$11,155,490 79

There are pending in the courts suits by parties claiming a lien upon the property, the amount of these claims being \$264,457.21. Two claims, amounting to \$90,246.66, have been settled during the year. These suits are a legacy from the old management of the road.

The work done during the year was as follows:

Locomotive mileage, passenger.....	307,532
" " freight.....	354,765
" " service.....	83,478
" " switching.....	71,611

Total..... 817,386

Mileage of passenger train cars..... 1,217,958

" freight cars..... 4,103,134

" service cars..... 294,428

Passengers carried..... 251,809

Passenger mileage (26.47 per train mile)..... 7,834,138

Tons freight carried..... 645,067

Tonnage mileage (72.32 per train mile)..... 25,835,438

Average receipt per passenger per mile..... 3.37 cts.

Average receipt per ton per mile, revenue freight only..... 3.16

Average receipt per ton per mile, all freight..... 2.54

Included in the tonnage mileage above are 5,070,489 ton-

miles made by company freight. Included in the freight car

mileage are 1,374,752 miles made by foreign cars; the com-

pany's cars made 2,170,125 miles on foreign roads. The ton-

nage included 60,236 tons of coal. The average cost of loco-

motive service was 23.1 cents per mile run.

The earnings and expenses for the year were as follows:

	1876-77.	1875-76.	Inc. or Dec.	P. c.
Passengers.....	\$269,015 66	.....	.....	.....
Freight.....	656,466 10	.....	.....	.....
Mail and express.....	38,400 14	.....	.....	.....
Rents and miscel-	.....	.....	.....	.....
laneous.....	3,601 99	.....	.....	.....
Total.....	\$967,483 89	\$1,329,200 87	Dec. \$361,716 68	27.2
Exp's and taxes.....	771,063 27	892,600 10	Dec. 121,536 83	13.6

Net earnings.....\$196,420 62

Gross earnings per..... 2,629 03

mile..... 3,611 96

Dec. 982 93

Net earnings per..... 633 75

mile..... 1,186 41

Dec. 652 66

Per cent. of exp's..... 79 70

67.15

Dec. 12.55

18.7

These earnings and expenses, as stated by divisions, were as follows:

	Earnings.	Expenses.	Net earnings.	Earnings P. c. per mile.
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Main Line.....\$763,189 99

\$584,380 93

\$178,806 06

\$3,492 76

76.57

Milwaukee Div..... 122,021 96

118,817 64

3,204 32

2,359 97

97.37

Pacific Division..... 44,639 68

32,332 38

12,307 20

1,822 72

72.43

Muscatine Div..... 37,635 36

35,532 32

2,103 04

1,218 94

94.41

Total.....\$967,483 89

\$771,063 27

\$196,420 62

\$2,629 70

79.70

The income account can be condensed as follows:

Net earnings.....\$196,420 62

Cash from Receiver, July 1, 1876..... 30 68

Real estate sold and leased, interest and miscellaneous..... 17,260 45

Car mileage..... 7,769 53

Total.....\$221,481 28

Deduct cash on hand..... \$13,083 81

" bills and accounts receivable..... 42,674 17

55,757 98

\$165,723 30

Balance.....

Debts of old company..... \$10,247 11

Expenses of reorganization..... 17,353 66

Debts of Receiver..... 34,127 94

Real estate and right of way..... 2,216 66

New equipment and improvements of road..... 114,417 30

Ground and buildings, new shops..... 75,111 35

Damage by floods..... 17,068 18

Construction of new road..... 60,773 96

Material on hand..... 69,047 93

400,364 09

Excess of expenditure..... \$234,640 79

This amount is represented by bills and accounts payable, constituting the floating debt.

The falling off in earnings was due to the light crops of the previous year, and to the reduction of rates enforced by the Iowa law. Grain forms the largest part of the tonnage of the road, and lumber and other return freights are necessarily decreased by light crops and the consequent inability of the farmers to buy.

The road and equipment were in poor condition, making many improvements necessary; much damage was also done during the year by floods. There were laid during the year 3,688 tons of steel rails, and 4,288 miles of new sidings were built; the bridges and buildings were much improved; 3 engines, 2 passenger, 6 stock and 123 coal and flat cars were added to the equipment, and new shops were built at Cedar Rapids. The work put on the road was necessary and has been well done.

The crops this year are unusually good, and the earnings have already begun to show a great improvement over those of last year.